Naval Air Warfare Center Weapons Division



Point Mugu, CA 93042-5001

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Tidal and Lunar Data For Point Mugu, San Nicolas Island, and The Barking Sands Area During 1994

by
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and
Bernard Cohenour
Geophysics Division
Range Operations Department

DECEMBER 1993

Approved for Public Release; Distribution is Unlimited

94-05155

FOREWORD

This publication combines a single source for all tidal and lunar data for operational locations of the Naval Air Warfare Center for use in Calendar Year 1994.

Mr. R. Helvey, Head Geophysics Analysis Branch; Mr. C. Fisk and Mr. B. Cohenour, Task Engineers; Mr. J.S. Rosenthal, Head, Geophysics Division; Mr. W. Leslie, Associate Range Operations Officer; CAPT M.D. Barrett, Range Operations Officer; and Dr. R.J. Warnagieris, Director, Sea Range Directorate, have approved this report for publication.

J. Rosenthal, Head Geophysics Division Range Operations Department 31 December 1993

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INTRODUCTION

This publication combines a single source for all tidal and lunar data for operational locations of the Naval Air Warfare Center Weapons Division for use in Calendar Year 1994.

The data presentations are in two main divisions: one for Point Mugu and San Nicolas Island, and the other for the Barking Sands area. Within each division, the times of moonrise and moonset and tidal data are given. Appendixes provide information on lunar phases, sunrise and sunset times and calculation of the tide at any time. This publication is issued annually. Information regarding this data may be obtained from the Geophysics Division of the Range Operations Department.

Special tidal data requests (ranges, heights at any time, and/or graphical depictions of each) for Point Mugu, San Nicolas Island, or Barking Sands, as well as for other locations, can be made by contacting the authors of this report at the Naval Air Warfare Center Weapons Division (805) 989-8383.

DATA SOURCE AND TIME REFERENCES

The data given here have been prepared from information contained in Tide Tables for the West Coast of North and South America including the Hawaiian Islands, 1994 published by the National Ocean Service.

For Point Mugu and San Nicolas Island, all times listed are Pacific Standard Time (PST), add eight hours to obtain Universal Coordinated Time (UCT or Z). When Daylight Savings Time (PDT) is in effect, one hour is to be added to the times given. In 1994, Pacific Daylight Time is scheduled to commence at 0200 PST on Sunday, 3 April, and to end at 0200 PDT on Sunday, 30 October.

For the Barking Sands Area, all times listed are Alaska-Hawaii Standard Time (AHST); add ten hours to obtain UCT. Daylight Savings Time is not observed in Hawaii.

TIDAL DATA

The ranges of tidal heights that may be expected at Point Mugu and San Nicolas Island are shown in Table 1. The range of heights for the primary harbor in the Barking Sands area, Port Allen, is shown in Table 2. The times and height of high and low tides for 1994 at Point Mugu are given in Tables 4 through 15, and at San Nicolas Island in Tables 16 through 27. Similar tide data for Port Allen are given in Tables 29 through 40.

Poi	nt Mugu	
Tidal Levels	Height (Ft)	Occurrence
Extreme high water	8.52	2018, May 24
Mean tide level (mean sea level)	2.74	
Extreme low water	-1.66	0336, May 25
Tidal Ranges	Height	Occurrence
Maximum	8.48	Dec 03
Minimum	1.42	Mar 18
Tidal Levels	olas Island Height (Ft)	Occurrence
i idar Beves		Occurrence
Extreme high water	6.30	0848, Dec 03
Extreme high water Mean tide level (mean sea level)	6.30 2.51	0848, Dec 03
Extreme high water Mean tide level (mean sea level) Extreme low water		0848, Dec 03 0824, May 24
Mean tide level (mean sea level)	2.51	
Mean tide level (mean sea level) Extreme low water	2.51 -1.52	0824, May 24

TABLE 2. Tidal Ranges for Port Allen

Tidal Levels	Height (Ft)
Extreme high water	2.6
Mean higher high water	1.6
Mean high water	1.2
Mean tide level (mean sea level)	0.7
Mean low water	0.2
Mean lower low water	0.0
Extreme low water	-0.4

These tables list the times and heights of high and low tide for each month of the year and chronologically through each day. The heights are all measured from mean lower low water and are values for a sea unaffected by wind waves or swell. The height and character of the sea surface are influenced by factors other than the predictable positions of the moon and sun, and thus are likely to be higher or lower than computed values indicate.

LUNAR DATA

Times of moonrise and moonset for the Point Mugu-San Nicolas Island area in 1994 are given in Table 3, and for the Barking Sands area in Table 28, preceding the tidal data for the respective stations. Information regarding the phases of the moon in 1994 is found in Appendix B.

TABLE 3. Moonrise and Moonset, Point Mugu, 1994

Astronomical Applications Dept U.S. Naval Observatory Washington, D.C. 20392-5420	Sept. Oct. Nov. Dec. Rise Set Rise Set has	1843 0741 1843 0945 2017 1002 2113 1923 0850 1934 1039 2122 1042 2216 2205 0957 2030 1126 2225 1118 2315 12051 1100 2129 1207 2327 1152 2330 1244 1224 0013	77 1245 2332 1318 0026 1256 0109 15 1329 1350 0124 1328 0204 1407 0034 1422 0220 1403 0258 16 1443 0134 1454 0315 1440 0352 18 1516 0232 1527 0409 1521 0445	1547 0329 1603 0504 1606 0537 1619 0425 1641 0557 1654 0627 1652 0520 1725 0650 1746 0714 1726 0615 1809 0741 1840 0758 1803 0709 1858 0830 1936 0839	1842 0803 1951 0916 2034 0917 1926 0855 2045 0958 2132 0953 2012 0945 2142 1038 2232 1027 2103 1033 2240 1115 2333 1101 2156 1118 2339 1150	2 1159 1225 0036 1214 0 1239 0041 1301 0141 1255 1316 0144 1338 0248 1341 0 1352 0250 1418 0356 1434 3 1429 0359 1504 0502 1533 8 1506
Astronomical Applicat U.S. Naval Observatory Washington, D.C. 2039)	Pt. Oct. No. Set Rise Set Octobro Set Set Octobro Set Octobr	1843 0741 1843 0945 1923 0850 1934 1039 2005 0957 2030 1126 2051 1100 2129 1207 2142 1156 2230 1244	1245 2332 1318 1329 1407 0034 1422 1443 0134 1454 1516 0232 1527	0329 1603 0425 1641 0520 1723 0615 1809 0709 1858	0803 1951 0855 2045 0945 2142 1033 2240 1118 2339	1159 0041 1239 0041 1316 0144 1352 0250 1429 0359 1506
Astronomics U.S. Naval Vashington	pt. 0c Set Rise h m h m 1530 0205 1611 0308 1651 0414 1728 0521 1806 0630	1843 0741 1923 0850 2005 0957 2051 1100 2142 1156	1245 1329 1407 1443 1516	1547 0329 1619 0425 1652 0520 1726 0615 1803 0709		
			C 20 20 20		27832	2252 2350 2350 0050 0153 0258
		0635 0742 0850 0958 1105	1208 2237 1307 2335 1400 1447 0036 1529 0138	1606 0239 1641 0339 1714 0438 1746 0535 1818 0631	1851 0727 1926 0822 2004 0916 2045 1009 2129 1101	2218 1151 2310 1238 1322 0005 1404 0104 1443
7661	Aug. Rise Set D	0435 1818 0537 1856 0640 1932 0745 2008 0850 2045	0955 2124 1102 2206 1208 2253 1313 2344 1415	1512 0040 1603 0140 1649 0243 1730 0346 1807 0448	1841 0549 1914 0647 1946 0745 2018 0841 2052 0936	2127 1031 2206 1125 2248 1218 2335 1309 1359 0026 1446
Point Mugu, California Rise and Set for the Moon for 1994 Pacific Standard Time	July Rise Set h m h m 1302 0019 1357 0054 1451 0132 1544	0301 1728 0352 1816 0448 1900 0546 1941 0647 2020	0748 2056 0851 2131 0954 2207 1058 2243 1203 2323	1309 1416 0006 1521 0054 1623 0149 1719 0248	1810 0351 1855 0456 1934 0600 2010 0702 2043 0802	2115 0900 2146 0957 2219 1052 2253 1147 2329 1241 1335
Point Mugu, California nd Set for the Moon for Pacific Standard Time	June Rise Set DOI 3 1227 0043 1322 0114 1416 0145 1510	0255 1659 0334 1752 0418 1844 0507 1933 0600 2019	0656 2102 0754 2141 0854 2218 0955 2254 1057 2329	1200 1305 0004 1412 0042 1520 0123 1629 0210	1735 0302 1836 0401 1931 0504 2019 0609 2101 0714	2138 0817 2212 0918 2244 1016 2315 1113 2346 1208
Po Rise and	Hay Rise Set h m h m 1045 0032 1145 0108 1243 0141 1339	0241 1528 0312 1622 0344 1716 0418 1811 0455 1904	0536 1957 0622 2048 0711 2135 0804 2220 0901 2301	0959 2340 1100 1202 0016 1306 0052 1411 0128	1519 0205 1630 0246 1740 0331 1850 0422 1955 0519	2053 0620 2144 0725 2228 0829 2306 0932 2341 1033 1131
	Apr. Rise Set h m h m 0953 0025 1053 0113 1154 0155 1254	0307 1449 0338 1544 0409 1639 0439 1733 0510 1827	0542 1922 0617 2016 0655 2109 0738 2201 0824 2251	0915 2337 1009 1107 0021 1208 0102 1310 0141	1415 0218 1522 0255 1632 0333 1743 0413 1855 0457	2006 0545 2113 0639 2213 0738 2306 0840 2352 0943
,20	Rise Set h m h m 223 0833 2337 0918 1008 0040 1102 0138 1200	0229 1259 0315 1359 0355 1458 0431 1557 0505 1653	0536 1749 0606 1844 0636 1939 0708 2033 0741 2128	0817 2221 0856 2315 0940 1028 0006 1121 0056	1218 0142 1319 0226 1423 0308 1529 0347 1637 0425	1747 0503 1858 0542 2010 0624 2120 0710 2228 0800 2329 0855
W119 07 ', N34 07	Feb. Rise Set 2334 @ Ph. 2334 @ Ph. 1035 0040 1120 0145 1210	0342 1404 0432 1505 0516 1606 0556 1706 0631 1804	0704 1902 0734 1957 0805 2052 0835 2147 0907 2241	0941 2336 1018 1059 0030 1145 0123 1237 0215	1333 0305 1434 0352 1539 0435 1645 0516 1753 0555	1902 0633 2011 0711 2121 0751
Location: W11	Jan. Day Rise Set h m h m h m 01 2119 0926 02 2223 1007 03 2329 1037 04 1113 05 0035 1152	06 0141 1234 07 0248 1322 08 0352 1414 09 0453 1512 10 0549 1614	11 0638 1716 12 0721 1818 13 0759 1918 14 0833 2017 15 0904 2113	16 0934 2208 17 1004 2303 18 1034 2357 19 1107 20 1142 0052	21 1221 0147 22 1305 0241 23 1355 0335 24 1450 0428 25 1550 0517	26 1654 0602 27 1759 0645 28 1906 0724 29 2013 0801 30 2120 0838 31 2227 0915

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TABLE 5. Point Mugu Tides, February 1994

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January 1994 Lagoon (Ocean Piers), 5.0' Morth, 1190 06.0'	highs, and lows in feet Add one hour for Daylight Savings Data Source (Port Musnams)	Time Ht Time Ht Time	1042 5.23 1754 -0.32 0554 1.95 1138 4.59 1830 0	0718 1.90 1236 3.85 1918 0 0854 1.63 1406 3.19 2012 1	1030 1.07 1612 2.80 2110 1	1246 -0.34 1906 3.30 2342 2	1516 -0.66 1954 3.60 0654 6.30 1418 -1.23 2036 3	0710 0.45 1454 -1.39 2110 0.0012 0.6 1510 -1.3 2144 0.0012 0.6 1510 -1.3 2144	0930 6.1 0627 -0.8 2255 4	1007 5.8 1659 -0.3 2330 4 1045 5.0 1730 0.1	0842 2.0 1124 4.4 1802 (0845 2.1 1210 3.7 1834	0808 2.1 1316 3.1 1910	1119 1.6 1734 2.7 2112	1330 0.78 1854 2.83 2248 1	1336 -0.17 1954 3.36	0718 5:83 1406 -0.55 2024 3 0718 5:83 1436 -0.64 2044 3	0754 6.03 1506 -1.02 2124 4	0918 5.94 1612 -0.91 2225 4	0954 5.59 1640 -0.60 2254 4	1044 5.03 1718 -0.14 2342 4 1130 4.33 1754 0.42				
January 1994 3u Legoon (Ocean Piers), 06.0' Morth, 1190 06.0'	highs, and lows in feet Add one hour for Daylight Savings Data Source (Port Musnams)	Time Ht Time Ht Time	1042 5.23 1754 -0.32 0554 1.95 1138 4.59 1830 0	0718 1.90 1236 3.85 1918 0 0854 1.63 1406 3.19 2012 1	1030 1.07 1612 2.80 2110 1	1246 -0.34 1906 3.30 2342 2	1516 -0.66 1954 3.60 0654 6.30 1418 -1.23 2036 3	0710 0.45 1454 -1.39 2110 0.0012 0.6 1510 -1.3 2144 0.0012 0.6 1510 -1.3 2144	0930 6.1 0627 -0.8 2255 4	1007 5.8 1659 -0.3 2330 4 1045 5.0 1730 0.1	0842 2.0 1124 4.4 1802 (0845 2.1 1210 3.7 1834	0808 2.1 1316 3.1 1910	1119 1.6 1734 2.7 2112	1330 0.78 1854 2.83 2248 1	1336 -0.17 1954 3.36	0718 5:83 1406 -0.55 2024 3 0718 5:83 1436 -0.64 2044 3	0754 6.03 1506 -1.02 2124 4	0918 5.94 1612 -0.91 2225 4	0954 5.59 1640 -0.60 2254 4	1044 5.03 1718 -0.14 2342 4 1130 4.33 1754 0.42				
January 1994 Lagoon (Ocean Piers), 5.0' Morth, 1190 06.0'	highs, and lows in feet Add one hour for Daylight Savings Data Source (Port Musnams)	Time Ht Time Ht Time	3.23 1754 -0.32 1.95 1130 4.59 1830 0	0718 1.90 1236 3.85 1918 0 0854 1.63 1406 3.19 2012 1	1030 1.07 1612 2.80 2110 1	1246 -0.34 1906 3.30 2342 2	1516 -0.66 1954 3.60 0654 6.30 1418 -1.23 2036 3	0710 0.45 1454 -1.39 2110 0.0012 0.6 1510 -1.3 2144 0.0012 0.6 1510 -1.3 2144	0930 6.1 0627 -0.8 2255 4	1007 5.8 1659 -0.3 2330 4 1045 5.0 1730 0.1	0842 2.0 1124 4.4 1802 (0845 2.1 1210 3.7 1834	0808 2.1 1316 3.1 1910	1119 1.6 1734 2.7 2112	1330 0.78 1854 2.83 2248 1	1336 -0.17 1954 3.36	0718 5:83 1406 -0.55 2024 3 0718 5:83 1436 -0.64 2044 3	0754 6.03 1506 -1.02 2124 4	0918 5.94 1612 -0.91 2225 4	0954 5.59 1640 -0.60 2254 4	1044 5.03 1718 -0.14 2342 4 1130 4.33 1754 0.42				
January 1994 3u Legoon (Ocean Piers), 06.0' Morth, 1190 06.0'	Fidel range, highs, and lows in feet. Time (PST) - Add one hour for Daylight Savings - Alternate Data Source (Port Hueneme)	Mt Time Mt Time Ht Time	1.94 1042 5.23 1754 -0.32 4.26 0554 1.95 1138 4.59 1830 0	4.43 0718 1.90 1236 3.85 1918 0 4.65 0854 1.63 1406 3.19 2012 1	4.94 1030 1.07 1612 2.88 2118 1	3.66 1248 -0.34 1906 3.30 2342 2	1.94 0654 6.30 1418 -1.23 2036 3	1.7 COLL 6.6 1518 -1.39 2118 1.7 COLL 6.6 1518 -1.3 2144 1.3	1.7 0930 6.1 0627 -0.8 2255 6	1.7 1007 5.8 1659 -0.3 2330 4 1.8 1045 5.0 1730 0.1	1.9 0842 2.0 1124 4.4 1802 (6.4 0808 2.1 1316 3.1 1910	4.5 1119 1.6 1734 2.7 2112	4.83 1306 0.28 1834 2.83 2246 3	5.18 1336 -0.17 1954 3.36	2.14 0842 3.33 1406 -0.55 2024 3 1.91 0718 5.83 1436 -0.84 2044 3	1.66 0754 6.03 1506 -1.02 2124 4	1.22 0916 5.94 1612 -0.91 2225 4	1.10 0954 5.59 1640 -0.60 2254 4	1.05 1044 5.03 1718 -0.14 2342 4 1.07 1130 4.33 1754 0.42				
January 1994 3u Legoon (Ocean Piers), 06.0' Morth, 1190 06.0'	Fidel range, highs, and lows in feet. Time (PST) - Add one hour for Daylight Savings - Alternate Data Source (Port Hueneme)	Mt Time Mt Time Ht Time	1042 5.23 1754 -0.32 0554 1.95 1138 4.59 1830 0	4.43 0718 1.90 1236 3.85 1918 0 4.65 0854 1.63 1406 3.19 2012 1	4.94 1030 1.07 1612 2.88 2118 1	3.66 1248 -0.34 1906 3.30 2342 2	1.94 0654 6.30 1418 -1.23 2036 3	1.7 COLL 6.6 1518 -1.39 2118 1.7 COLL 6.6 1518 -1.3 2144 1.3	1.7 0930 6.1 0627 -0.8 2255 6	1.7 1007 5.8 1659 -0.3 2330 4 1.8 1045 5.0 1730 0.1	1.9 0842 2.0 1124 4.4 1802 (6.4 0808 2.1 1316 3.1 1910	4.5 1119 1.6 1734 2.7 2112	4.83 1306 0.28 1834 2.83 2246 3	5.18 1336 -0.17 1954 3.36	2.14 0842 3.33 1406 -0.55 2024 3 1.91 0718 5.83 1436 -0.84 2044 3	1.66 0754 6.03 1506 -1.02 2124 4	1.22 0916 5.94 1612 -0.91 2225 4	1.10 0954 5.59 1640 -0.60 2254 4	1.05 1044 5.03 1718 -0.14 2342 4 1.07 1130 4.33 1754 0.42				
January 1994 3u Legoon (Ocean Piers), 06.0' Morth, 1190 06.0'	fidel range, highs, and lows in feet. Standard Time (PST) - Add one hour for Daylight Savings - Alternate Data Source (Port Hueneme)	. Time Mt Time Ht Time Ht Time	0454 1.94 1042 5.23 1754 -0.32 0010 4.26 0554 1.95 1130 4.59 1630 0	0106 4.43 0718 1.90 1236 3.85 1918 0 0200 4.65 0854 1.63 1406 3.19 2012 1	0306 4.94 1030 1.07 1612 2.80 2116 1	0512 3.66 1248 -0.34 1906 3.30 2342 2	0036 1:94 0654 6:30 1418 -1:23 2036 3	0201 1.7 0012 6.6 1516 -1.39 2118 6.6 1518 -1.3 2144	0326 1.7 0930 6.1 0627 -0.8 2255 d	0409 1.7 1007 5.8 1659 -0.3 2330 4 0453 1.8 1045 5.0 1730 0.1	0007 1.9 0542 2.0 1124 4.4 1802 (0133 6.6 0508 2.1 1316 3.1 1910	0328 4.5 1119 1.4 1734 2.7 2112	0518 4.83 1306 0.78 1854 2.63 2246 3	0600 5.16 1336 -0.17 1954 3.36	0010 2:14 0642 5:33 1406 -0.55 2024 3	0154 1.66 0754 6.03 1506 -1.02 2124 4	0318 1.22 0918 5.94 1612 -0.91 2225 4	0354 1.10 0954 5.59 1640 -0.60 2254 4	0548 1.03 1042 5.03 1718 -0.14 2342 4				
January 1994 3u Legoon (Ocean Piers), 06.0' Morth, 1190 06.0'	fidel range, highs, and lows in feet. Standard Time (PST) - Add one hour for Daylight Savings - Alternate Data Source (Port Hueneme)	nge Time Mt Time Ht Time	.55 0454 1.94 1042 5.23 1754 -0.32 .43 0018 4.26 0554 1.95 1138 4.59 1830 0	.73 0106 4.43 0718 1.90 1236 3.85 1918 0 .41 0200 4.65 0854 1.63 1406 3.19 2012 1	03 0412 6 24 1030 1.07 1612 2.80 2116 1	.00 0512 5.66 1248 -0.34 1906 3.30 2342 2	.53 0036 1.94 0654 6.30 1418 -1.23 2036 3	.9 010 1.9 0013 6.6 1518 -1.39 2118 6.6 1518 -1.3	.9 0326 1.7 0930 6.1 0627 -0.8 2255 d	.1 0409 1.7 1007 5.8 1659 -0.3 2330 4 .1 0453 1.8 1045 5.0 1730 0.1	.7 0007 1.9 0942 2.0 1124 4.4 1802 (.2 0047 4.4 0845 2.1 1210 3.7 1834	.7 0113 6.4 0808 2.1 1316 3.1 1910	1 0320 4.9 1119 1.6 1734 2.7 2112	.55 UTS 4.81 1250 0.76 1654 2.63 2246 3	35 0600 5.16 1336 -0.17 1954 3.36	.87 0118 1.91 0718 5.83 1436 -0.55 2024 3	12 0214 1.66 0754 6.03 1506 -1.02 2124 4	.84 0318 1.22 0918 5.94 1612 -0.91 2225 4	0354 1.10 0954 5.59 1640 -0.60 2254 4	0548 1.03 1042 5.03 1718 -0.14 2342 4				
January 1994 3u Legoon (Ocean Piers), 06.0' Morth, 1190 06.0'	fidel range, highs, and lows in feet. Standard Time (PST) - Add one hour for Daylight Savings - Alternate Data Source (Port Hueneme)	. Time Mt Time Ht Time Ht Time	1.94 1042 5.23 1754 -0.32 4.26 0554 1.95 1138 4.59 1830 0	.73 0106 4.43 0718 1.90 1236 3.85 1918 0 .41 0200 4.65 0854 1.63 1406 3.19 2012 1	03 0412 6 24 1030 1.07 1612 2.80 2116 1	.00 0512 5.66 1248 -0.34 1906 3.30 2342 2	.53 0036 1.94 0654 6.30 1418 -1.23 2036 3	.9 010 1.9 0013 6.6 1518 -1.39 2118 6.6 1518 -1.3	.9 0326 1.7 0930 6.1 0627 -0.8 2255 d	.1 0409 1.7 1007 5.8 1659 -0.3 2330 4 .1 0453 1.8 1045 5.0 1730 0.1	.7 0007 1.9 0942 2.0 1124 4.4 1802 (.2 0047 4.4 0845 2.1 1210 3.7 1834	.7 0113 6.4 0808 2.1 1316 3.1 1910	1 0320 4.9 1119 1.6 1734 2.7 2112	.55 UTS 4.81 1250 0.76 1654 2.63 2246 3	35 0600 5.16 1336 -0.17 1954 3.36	.87 0118 1.91 0718 5.83 1436 -0.55 2024 3	12 0214 1.66 0754 6.03 1506 -1.02 2124 4	.84 0318 1.22 0918 5.94 1612 -0.91 2225 4	0354 1.10 0954 5.59 1640 -0.60 2254 4	0548 1.03 1042 5.03 1718 -0.14 2342 4				
January 1994 3u Legoon (Ocean Piers), 06.0' Morth, 1190 06.0'	Fidel range, highs, and lows in feet. Time (PST) - Add one hour for Daylight Savings - Alternate Data Source (Port Hueneme)	nge Time Mt Time Ht Time	.55 0454 1.94 1042 5.23 1754 -0.32 .43 0018 4.26 0554 1.95 1138 4.59 1830 0	3.73 0106 4.43 0716 1.90 1236 3.85 1916 0 3.41 0200 4.65 0654 1.63 1406 3.19 2012 1	3.67 0306 4.94 1030 1.07 1612 2.80 2116 1	6.00 0512 5.66 1246 -0.34 1906 3.30 2342 2	7.53 0036 1.94 0654 6.30 1418 -1.23 2036 3	7.9 0201 1.7 0012 6.6 1518 -1.3 214 4	6.9 0326 1.7 0930 6.1 0627 -0.8 2255 6	6.1 0409 1.7 1007 5.8 1659 -0.3 2330 4	3.7 0007 1.9 0842 2.0 1124 4.4 1802 (2.7 0133 6.4 0808 2.1 1316 3.1 1910	3.1 0320 4.5 1119 1.4 1734 2.7 2112 3	1.75 U418 4.81 1230 U.78 1854 2.83 2248 7 4.55 U518 4.83 1306 0.28 1930 3.13 2348 7	8.38 0600 8.16 1336 -0.17 1954 3.36	6.87 0118 1.91 0718 5.83 1406 -0.55 2024 3	7.04 0184 1.66 0754 6.03 1506 -1.02 2124 4	6.84 0318 1.22 0918 5.94 1612 -0.91 2225 4	6.18 0354 1.10 0954 5.59 1640 -0.60 2254 4	3.91 0540 1.07 1130 4.33 1754 0.42				

TABLE 6. Point Mugu Tides, March 1994

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94					- Add one hour for Daylight Savings Time.	Time Ht		2054 2.35			1912 4.48	* *	•	2048 5.00	2130 4.95	•	2236 4.65	-	1912 2 70				1012 S 69	'n	•	9	Φ.	2354 5 12	י	
Point Mugu Tides, April 1994		r), CA	34o 06.0' North, 119o 06.0' West	Tidal range, highs, and lows in feet.	ior Daylight	Ŧ	6	ر ب	س د		0	10 0.21	0			1.67	- 3e 2 - 3	2.50	2.91	17.6	4.06			0	0	_		202	7	
ı Tide	1994	ean Pie	1190 06	and lo	hour	T i ne	1436	_	1718		1254				_	-	_			_	_				_	1518			1912	
Mugu	April 1994	100n (Oc	Morth,	highs,	Add one	¥			-0.05		4.45						3.08	i ~i	0.54	<u> </u>		0 '	•	•		4.20	m (~ ~	3.51	
		Mugu Lagoon (Ocean Pier), CA	0.90	range,		i. e	0754		1036			0712		0854							1112							1254	_	
TABLE 7.		_	340	Lidal	d Time	Ĭ	5.07				1.21			0.0							, 60		9 6	9	ī		7		-0.53	
TAE					Standar		0018	0124	0254	0524	0036	0118	0224	0254	0406	0442	0518	0200	9000	0124	0418	0518	0030	020	0254	0342	0430	1250	0730	
					Pacific Standard Time (PST)	Range					4.42																			
						Date	-	2	m •	- 10	•	~ «	•	₽:	- 2	2	<u>+ v</u>	5.5	~ :	2 2	20	21	77	2.5	25	56	27	8 7	300	
					Daylight Savings Time.	ž	5.20	;	98 20	2.23	1.89	4 22	4.42	4.57	7.73	4.73	4- 4- 6- 4- 8- 4-	4.40	4.21	2.63	2 62	2.25	<u>.</u>	4.58	5.03	5.45	50.00 00.00	, v	5.45	
994					nt Savin	7: *e	2348		1918	2242	2354	1054	2018	2042	2124	2148	2212	2318	2354	1854	2148	2312	1667	1930	2000	2036	2112	2230	2310	
larch 1994		5	Heat	n feet.	Day!igt	ž	0.87	1.46	2.90	3.30	3.66	3.97	-0.47	-0.31	0.20	0.53		1.62	1.98	2 6 6	2.96	3.30	4 69	-0.35	-0.37	-0.24	0.02	2 5	1.35	6
des, M	\$	n Pier),	90 06.0	- c - o	our for	7 	1730	1812	1430	1754	1848	1924	1406	1436	1524	1548	1630	1654	1718	1724	1754	1818	9291	1324	1354	1430	1506	1624	1706	1754
ngu Ti	Narch 1994	n (Ocea	rth, 11	gha, an	dd one h	ĩ	3.97	3.32	0.38	-0.02	-0.31	5 21	5.25	5.18	92.4	+.4	90.4	3.18	2.75	00-	0.72	0.38	90.0	5.01	5.19	5.19	5.02	4.00 60.4	3.72	3.30
Point Mugu Tides,		Mugu Lagoon (Ocean Pier)	340 06.0' North, 1190 06.0	Tidal range, highs, and lows	Standard Time (PST) - Add one hour for	T : De	1142	1248	0018	1112	1212	1254	0724	0754	0060	0936	1006	1130	1230	127	1012	1 36	1248	0636	0724	0618	0854	1040	- - - - - - -	1306
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TABLE 6. P		£	340	Tidal	<u></u>	ĩ	0.13	0.29	S 6	7. 4	6.	20 C		98.0	0.50	6.43	0 . 4 2 . 4	0 2	0.92	- 4	3.9	9.0	- 4	1	0 20	90 0-	5.5	9 2	99.	-0.43

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		C.	Lest	in feet.	Dayligi	ž	4	2	-	1.62	92.	80.	2.01	2.08	2.15	2.33	2.40	2.37	- 4 - 7	4.97	5.44	1.53	6 9	99	1 67	1.72	1.82	2 00	2.16	4 35	4 . 4
		flugu Lagoon (Ocean Pier), CA	Horth, 1190 06.0' West		- Add one hour for Daylight	1 : m	1634	1 206	1112	1154	1230	1306	1412	1442	1518	1648	1742	1854	1518	1606	1654	9 :	1306	1354	1448	1536	1624	0 E	1930	1424	1518
	June 1994	(Ocean	, 119	highs, and lows	one ho	ž	7,		3.12	3 16	3.24	3.32	3.4.	3.48	3.51	9.5	3 72	3.91	دد ال 75	90	35	3 30	27.5	9 6	107	1.15	1 .20	27.	1.28	77 0	1 28
	يال	Lagoon		e, high] . e									1036													1248			
		flugu	340 06.0'	Tidal range,	Pacific Standard Time (PSI)																										
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ı						Date	-	- ^		*	י חנ	•	- 90	Ŷ	2 :	- 2		- :	2 2	-	- 9	2 5	7 -	; ;	23	5	52	9 6	. 82	5	30
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		-			Savings Time.		2046 2.30	~ -	-						2106 5.26					2218 1.90		Ŋ	1848 6.04	اض	ei va	م	S.	r.	2		
		æ		feet	uylight Savings Time.	T ae	.67 2048 2.	94 2224 2.	18	73 1830	94 1854	1924	49 2012	.66 2036	83 2106 02 2136	21 2212	40 2254	5/ 2342	64 2040	04 2218	53 2324	87 1806 5.	01 1848 6	1930 6.	2106 6	2154 6.	2242 5.	2330 5.	2018 2	2148 2	
		ier), CA	06.0' West	ows in feet	for Dayli	Ht Time Ht	3.67 2046 2.	3.94 2224 2.	9 4	0.73 1830	0.94 1854	1 14 1924	1.49 2012	1.66 2036	2 02 2106	2.21 2212	2.40 2254	2.57 2342	3.64 2040	4.04 2218	4.53 2324 c.ne	0.87 1806 5.	1 01 1848 6	1.15 1930 6.	1 50 2018 8	1 66 2154 6.	1 88 2242 5.	2.10 2330 5.	4 01 2018 2	4 19 2148 2	
	+661 f	Pier),	.0.90		for Dayli	Time Ht Time Ht	19 1530 3.67 2048 2.	3.94 2224 2.	52 1754 4,48	1212 0.73 1830	1242 0.94 1854	1312 1 14 1924	1406 1.49 2012	1436 1.66 2036	1506 1 83 2106	1606 2.21 2212	1648 2.40 2254	1642 2.57 2342	1530 3.64 2040	1612 4.04 2218	1554 4.53 2324	1154 0.87 1806 5.	1236 1 01 1848 6	1324 1.15 1930 6.	1412 30 ZUIG B.	1548 1.66 2154 6.	1636 1 88 2242 5.	1736 2.10 2330 5.	1416 4 01 2018 2	1536 4 19 2148 2	
	Hay 1994	(Ocean Pier),	. North, 1190 06.0°	, highs, and lows in	- Add one hour for Dayli	Ht Time Ht Time Ht	-0.19 1530 3.67 2048 2.	0.08 :630 3.94 2224 2.	0.52 1754 4.48	3.70 1212 0.73 1830	3.68 1242 0.94 1854	3.66 1312 1 14 1924	3.58 1406 1.49 2012	3.50 1436 1.66 2036	3.41 1506 1 83 2106 3.30 1536 2 02 2136	3.20 1606 2.21 2212	3.15 1646 2.40 2254	3,19 1742 2.57 2342	0.31 1530 3.64 2040	0.46 1612 4.04 2218	0.50 1654 4.53 2324	3.70 1154 0.87 1806 5.	3.84 1236 1.01 1848 6	3,94 1324 1,15 1930 6.	3 99 1412 1 30 2018 8.	3.94 1548 1.66 2154 6.	3.89 1636 1.88 2242 5.	3.86 1736 2.10 2330 5.	3.09 1040 2.23	0.36 1536 4.19 2148 2	
	Hay 1994	Pier),	06 0' North, 1190 06.0'	, highs, and lows in	- Add one hour for Dayli	Time Ht Time Ht	0036 -0.19 1530 3.67 2048 2.	0942 0.08 (630 3.94 2224 2.	1130 0.52 1754 4.48	0606 3.70 1212 0.73 1830	0654 3.68 1242 0.94 1854	0742 3.66 1312 1 14 1924	0854 3.58 1406 1.49 2012	0930 3.50 1436 1.66 2036	1006 3.41 1506 1 83 2106 1048 3 30 1536 2 02 2136	1136 3.20 1606 2.21 2212	1236 3.15 1648 2.40 2254	1336 3,19 1742 2,57 2342	0824 0.31 1530 3.64 2040	0918 0.46 1612 4.04 2218	1012 0.60 1654 4.53 2324	0606 3 70 1154 0.87 1806 5.	0706 3.84 1236 1.01 1848 6.	0006 3.94 1324 1.15 1930 6.	0906 3.99 1412 1.30 ZUTB B.	1048 3,94 1548 1,66 2154 6.	1142 3.89 1636 1.88 2242 5.	1242 3.86 1736 2.10 2330 5.	0348 -0.11 1436 4.01 2018 2	0842 0 36 1536 4 19 2148 2	
	+661 yell	Lagoon (Ocean Pier),	0' North, 1190 06.0'		- Add one hour for Dayli	Ht Time Ht Time Ht	4.58 0836 -0.19 1530 3.67 2048 2.	4.12 0942 0.08 1630 3.94 2224 2.	3.73 1130 0.52 1754 4.48	1.07 0606 3.70 1212 0.73 1830	0.64 0654 3.68 1242 0.94 1854	0.28 0742 3.66 1312 1.14 1924	-0.02 0010 3.03 1342 1.32 1948 -0.23 0854 3.56 1406 1.49 2012	-0.37 0930 3.50 1436 1.66 2036	-0.43 1006 3.41 1506 1.83 2106 -0.41 1048 3.30 1536 2.02 2136	-0 33 1136 3.20 1606 2.21 2212	-0.20 1236 3.15 1648 2.40 2254	-0.03 1336 3,19 1742 2,57 2342 0.14 1435 3.35 1006 2.63	4.06 0824 0.31 1530 3.64 2040	3 74 0916 0.46 1612 4.04 2218	3 57 1012 0.60 1654 4.53 2324	0.38 0606 3.70 1154 0.87 1806 5.	-0 37 0706 3.84 1236 1 01 1848 6	-1.01 0806 3.94 1324 1.15 1930 6.	-	-1.64 1048 3.94 1548 1.66 2154 6.	-1.42 1142 3.89 1636 1.88 2242 5.	-1.05 1242 3.86 1736 2.10 2330 5.	-8.59 1342 3.69 1010 2.23 4 55 0748 -0.11 1436 4 01 2018 2	3 93 0842 0 36 1536 4 19 2148 2	
	+661 yell	Lagoon (Ocean Pier),	06 0' North, 1190 06.0'	, highs, and lows in	- Add one hour for Dayli	Time Ht Time Ht	0054 4.56 0836 -0.19 1530 3.67 2048 2.	0218 4.12 0942 0.08 (630 3.94 2224 2.	0500 3.73 1130 0.52 1754 4.48	0024 1.07 0606 3.70 1212 0.73 1830	0106 0.64 0654 3.60 1242 0.94 1854	0142 0.28 0742 3.66 1312 1.14 1924	0246 -0 23 0854 3.56 1406 1.49 2012	0318 -0.37 0930 3.50 1436 1.66 2036	0354 -0.43 1006 3.41 1506 1.83 2106 0430 -0.41 1048 3.30 1536 2.02 2136	0506 -0 33 1136 3.20 1606 2.21 2212	0548 -0 20 1236 3.15 1648 2.40 2254	0636 -0.03 1336 3,19 1742 2.57 2342	0042 4.06 0824 0.31 1530 3.64 2040	0206 3 74 0918 0.46 1612 4.04 2218	0342 3 57 1012 0.60 1654 4.53 2324	0018 0 38 0606 3 70 1154 0.87 1806 5.	0112 -0 37 0706 3.84 1236 1 01 1848 6.	0154 -1.01 0806 3.94 1324 1.15 1930 6.	0248 -145 0906 399 1412 130 2018 B.	0424 -1 64 1048 3.94 1548 1.66 2154 6.	0512 -1.42 1142 3.89 1636 1.88 2242 5.	0554 -1.05 1242 3.86 1736 2.10 2330 5.	0554 -0.59 1342 3.69 1040 2.23 0030 4 55 0248 .0.11 1436 4 01 2018 2	0130 3 93 0842 0 36 1536 4 19 2140 2	
	1994	Lagoon (Ocean Pier),	06 0' North, 1190 06.0'	, highs, and lows in	for Dayli	Ht Time Ht Time Ht	4,77 0054 4.56 0636 -0.19 1530 3.67 2048 2.	4.04 0218 4.12 0942 0.08 1630 3.94 2224 2.	3.91 0342 3.03 1042 0.31 1710 4.22 2330 1.	3.97 0024 1.07 0606 3.70 1212 0.73 1830	4 26 0106 0.64 0654 3.68 1242 0.94 1854	4.78 0142 0.28 0742 3.66 1312 1.14 1924	5.20 0210 -0 02 0610 5.03 1342 1 32 1346 5.51 0246 -0 23 0854 3.56 1406 1.49 2012	5 67 0318 -0.37 0930 3.50 1436 1.66 2036	-0.43 1006 3.41 1506 1.83 2106 -0.41 1048 3.30 1536 2.02 2136	5 31 0506 -0 33 1136 3.20 1606 2.21 2212	4 93 0548 -0 20 1236 3.15 1648 2.40 2254	4 45 0636 -0.03 1336 3,19 1742 2.57 2342	3 75 0042 4.06 0824 0.31 1530 3.64 2040	3 59 0206 3 74 0918 0.46 1612 4.04 2218	3 93 0342 3 57 1012 0.60 1654 4.53 2324	5 20 0018 0 38 0606 3 70 1154 0.87 1806 5.	6 41 0112 -0 37 0706 3.84 1236 1 01 1848 6.	7 38 0154 -1.01 0806 3.94 1324 1.15 1930 6.	7 97 0248 - 45 0906 3 99 1412 1 30 2018 50 m s s 0332 1 45 0654 3 00 1454 1 47 2106 6	2 85 0424 -1 64 1048 3,94 1548 1,66 2154 6.	7,19 0512 -1.42 1142 3.89 1636 1 88 2242 5.	6 24 0554 -1.05 1242 3.86 1736 2.10 2330 5.	4 49 0054 -0.59 1342 3.09 1040 2.23	3 83 0130 3 93 0842 0 36 1536 4 19 2148 2	

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TABLE 11. Point Mugu Tides, August 1994

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CA in feet Daylight Ht	2.63	2.56	2.39	2.17	1.69	1.49	1.33	1 23	1 25	± 5	2 S	5.51	5.80	2.08	92.		0 4	1.12	9		- \$	1.67	- -	4	77	200	2
rean Pier), CR 119a 06.3' Lest and lows in feet er hour for Dayli	1036	136	1224	1306	1418	1454	1542	1724	1824	1248	1348	1618	1724	1212	1306	0 6 4 1	1506	1548	1624	1706	1754	1054	1248	0151	7151	1124	; ;
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flugu Lago 34o 06.0° H a) range, h	0636	0212	0748	0818	9060	0936	1000	1106	1148	0612	0654	0948	1112	0712	0748	000	8 60	0954	1024	1054	1124	1154	0554	0000		1012	
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The.	1.31		5.32	5.55	5.75	5.03	5.86	5.64	5.27		1.75	1 36		5.98	6.31	6.52	6 58	5.4.5			46	•	96.1	1.85	- 19		
ot Savings Time.	31	υ	יי אי	vi	N, F	יט יט	2106 5.86	ויא	vi ∗			- (D	5	1818 6.31	٥	•	•	o u	י ני	. 4		1954 1.98	_	_		
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	4.63 2342 1.31	4.83	2.26 1824 5.	2.24 1854 5.	2.19 1930 5.	2 04 2036 5	2106 5	1.95 2142 5.	1.94 2224 5.	1.90	4.70 2006 1	4.94 2142 1	5.24 2306 0	2,08 1730 5	2.03 1818 6	1.88 1906 6	1 71 1954 6	1.58 2036 6	5 4512 55 1	1 64 2242 5	1 78 2324 4	1.92	1954	4 44 2136 1.	4 50 2306 1.		
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July 1994 agoon (Ocean Pier), (I' North, 1190 O6 O' L I', highs, and loss in - Add one hour for D ine Ht Time I	1,70 1612 4.63 2342 1.31	2.01 1654 4.83	3.15 1154 2.26 1824 5.	3.33 1242 2.24 1854 5.	3.50 1318 2.19 1930 5	3.65 1354 2.11 2006 5.	1512 1 98 2106 5.	4 06 1554 1.95 2142 5	4 19 1636 1.94 2224 S. 4 34 1736 1 94 2312 4	4.51 1842 1.90	0.71 1330 4.70 2006 1	1.21 1430 4.94 2142 1	1 66 1530 5.24 2306 U	3.31 1054 2.08 1730 5	3.62 1206 2.03 1818 6	1254 1.88 1906 6	4.17 1354 1.71 1954 6	4 36 1436 1.58 2036 6	4 56 1606 1 55 2154 5	4 50 1654 1 64 2242 5	4 56 1742 1 78 2324 4	1842 1.92	1.27 1318 4.46 1954 1.	1.77 1400 4.44 2136 1.	2.21 1506 4 50 2306 1.	2 52 1606	
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July 1994 agoon (Ocean Pier), (North, 1190 06 0'' 1, highs, and loss in - Add one hour for D	2.88 0912 1.70 1612 4.63 2342 1.31	2.82 1012 2.01 1654 4.83	.41 0736 3,15 1154 2,26 1824 5,	0.01 0812 3.33 1242 2.24 1854 5.	-0.26 0842 3.50 1318 2.19 1930 5.	-0 49 0912 3.65 1354 2.11 2006 5. -0 64 0042 3.70 1430 2.04 2036 5.	69 1012 3.92 1512 1 98 2106 5.	-0.63 1042 4 06 1554 1.95 2142 5	-0 46	0.23 1242 4.51 1842 1.90	13 0648 0.71 1330 4.70 2006 1.	3,49 0736 1.21 1430 4.94 2142 1	3.07 0836 1.66 1530 5.24 2306 0	0.10 0624 3.31 1054 2.08 1730 5	-0.48 0724 3.62 1206 2.03 1818 6	-0.90 0806 3.92 1254 1.88 1906 6	-1 14 0842 4.17 1354 1.71 1954 6	1 17 0910 4 36 1436 1.58 2036 6	2 1.03 0954 4.54 1521 152 2.154 5 5 451 55 1564 56 1606 1.55 2154 5	-0.15 1030 1.30 1050 1.53 2131 3	0 18 1154 4 56 1742 1 78 2324 4	0 72 1230 4 51 1842 1.92	80 0630 1.27 1318 4.46 1954 1.	3.20 0706 1.77 1400 4.44 2136 1.	2.79 0754 2.21 1506 4 50 2306 1.	8 2 80 0906 2 52 1606	

Date

TABLE 12. Point Mugu Tides, September 1994

TABLE 13. Point Mugu Tides, October 1994

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						Savings Time.	H.	24 5.09								54 0.25		•	•		* *	. 60		•		54 0.89					854 4,53			
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	1994	Mugu Lagoon (Ocean Pier),	1190 0611	Page		hour		1230																1706			_	_	_		1254			1
	October 1994	00) (Oc	Morth,	40.4	, eng.	Add one		4 52																							5 38			
		ugn Lag	34o 06.0' Morth, 119o	*0000	•	PST) -	Time	0642	0736	0812	0842	0954	1042	0636	0824	9001	81.7	0648	0718	0742	0800	0848	0918	8460	0436	0518	0654	9060	1036	1130	0624			١
		E	340	100) = = = = = = = = = = = = = = = = = = =	ž	0.43	0				2.78			4.08					2 -				3.23	3.17	3.32	3.61	3 96	+ 39	0.76			
						Standard Time (PST)	<u>.</u>	0024	0130	0206	0236	0354	0436	0000	0336	0448	0536	0030	0100	0136	0154	0248	0312	0336	0010	0154	0336	0430	0454	0524	0012			
					;	Pacific	Range	4.66	5.08	5.83	6 4 5 5	6.62	6.20	0 S	4.63	4 49	4.45	63			2 Z			4.92							4.91			
					•	ā.	Dat e	- ~	ı m	+ (ın ve	~	&	, č	=	12	2 3	5 5	9	1.	8 0 0	50	21	22	3 %	22	8	27	58	53	3 5			
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							1	1806	1848	2006	2048	2130	2306		1936	2230	2336	•	1854	1936	2012	2048	2206	2242	2330	1030	2054	2218	2312	2354				
		ā		Lest	in feet.	Daylig∱	ž	2.34	- 6	25.1	0.75	0.49	0.36	0.50		5 2.2	5.21	5.39	C .	60.	0.83	0.66	0.65	92.0	0.95	9	3 4	4 23	4 .31	+ 24	. 8.			
	*00		, , , ,	0 90 0		- Add one hour for Daylight	<u>:</u>	1212	1248	1330	140	1530	1712	1816	1206	1318	1606	1718	1306	1342	1424	1530	1606	1642	1724	1136	1236	1354	1530	1636	20			
	Appropries			Morth, 1190 06	highs, and lows	d one b	ž	3.83	<u>*</u> :	4. 4 6. 5 6. 5	5.12	5.39	5.65	2.60	20.05	2.57	2 62	2 28	5 4	96	5 13	5.25	5.27	5.19	5 04		2 84	3.12	3 05	2.67	2.17			
	j			0			. <u></u>	9020	0736	0.754	0846	0918	1024	1112	0542	0616	0954	1118	0724	0754	0812	0836	0936	0954	1030	1034	0530	0718	0948	1054	1154			
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					_	Pacific Standard Time (PST)	 	0048					0424			0354		2190								2440			0536		_			
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TABLE 15. Point Mugu Tides, December 1994

 						1	ŀΑ	W	CV	VP	NS	T	M.	76	<u>67</u>													
December 1994 Hugu Lagoon (Ocean Pier), CA		Tidal range, highs, and lows in feet.	Pacific Standard Time (PST) - Add one hour for Daylight Savings Time.	Date Ronge Time Ht Time Ht Time Ht	7.78 0054 1.42 0712 6.57 1424 -1.20 2042	8.35 0142 1.49 0754 6.83 1512 -1.53 2130 4.19	8 5	7.41 0412 1.89 1012 6.29 1730 -1.13	6.36 0006 4.15 0506 2.08 1100 5.70 1824 -0.66	3.85 0200 4.24 0736 2.33 1300 4.26 2012 0.41	3.50 0300 4.40 0918 2.16 1424 3.64 2106 0.90	3.31 0400 4.61 1048 1.74 1606 3.29 2206 1.30	4.33 0530 5.06 1242 0.73 1842 3.26 2342 1.82	4.96 0606 5.26 1324 0.31 1930 3.36	14 5 48 0024 1.96 0642 5 44 1354 -0 03 2012 3.46 G	6 19 0130 2.07 0742 5.72 1454 -0.46 2118	6.36 0206 2.09 0806 5.79 1530 -0.57 2148	6.38 0236 2.11 0836 5.79 1554 -0.59 2218	5 98 0342 2.21 0942 5.51 1706 -0.39	5.36 0424 2.30 1018 5.21 1735 -0.17	3 79 0054 3.90 0612 2.42 1142 4.27 1854	3.22 0148 4 09 0736 2 34 1248	3,12 0242 4.37 0918 1,98 1424 3,18 2036	3 41 U336 4.73 1U40 1.33 1012 2.99 2.192 4 66 D424 5.21 1154 D.54 1242 3.13 2248	5,94 0518 5,71 1248 -0,24 1854 3,41 2348	7.09 0606 6.18 1336 -0.90 1948 3.71	7.95 0042 1.71 0654 6.57 1418	8 44 0136 1 61 0748 6.79 1454 -1.65 2124
() ()	2	us in feet.	for Daylight Savings Time.	Time At Time At	-0.21 1948 4	75 2036 4	7	-1.09 2324 4	-0.82	5.11 1954	•	4.17 2206 3.00 2254	3.93 2348	3.91	1330 0.43 1930 3.89 1406 0.12 2012 3.86	-0.09 2042	-0.22 2118	-0.27 2154	-0.14 2324	0.02	1.68 1854	206 4 27 1948 0.64	3 85 2042	3.30 2.172	3 66 2324	3.84	Ó	
November 1994 Mugu Logoon (Ocean Pler),	34o 06.0' North, 119o 06	Tidal range, highs, and lous	anderd Time (PST) - Add one hour for	Time Ht Time Ht Ti	0.82 0654 5.87	0.95 0736 6.29	0854 6.66	1.67 0942 6.54	1.99 1024 6.20	3.89 0636 2.58	4.04 0812 2.62	4.32 0948 2.33	4.93 1206 1.30	5.18 1254 0.82	0024 1 25 0642 5.38 13 0054 1 47 0706 5 53 34	1.65 0736 5.64	1.82 0754 5.70	1.96 0824 5.71 2.11 0848 5.65	2.27 0924 5.52	2.45 0854 5.32	3 43 0518 2.81	3 55 0630 2 93 1	3.79 0818 2.81	4 60 1106 1 66 1	5.11 1154 0.86	5.65 1254 0.05 1	1 35 0624 6.16 1	

Date

hour for Daylight Savings Time 33.66 24 48 88 88 1.61 1.98 2.29 2.36 2.15 TABLE 17. San Nicolas Island Tides, February 1994 1848 1942 2106 2242 2354 2024 2054 2124 2154 2218 22248 2312 2312 1812 1836 1954 2230 2336 and lows in feet 33º 16.0' North, 119º 30.0' West Ĩ San Nicolas Island, February 1994 Pacific Standard Time (PST) - Add one Tidal range, highs, Ŧ 00106 00842 11108 11108 11336 00134 00134 11006 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 11106 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TABLE 18. San Nicolas Island Tides, March 1994

TABLE 19. San Nicolas Island Tides, April 1994

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		Œ	. West	in feet.	Pacific Standard Time (PST) - Add one hour for Daylight Savings Time	ž	2.88																					7				
ž	.	and, CA	0 30 0.	and loss	our for	T.	1448	1730	1818	1312	1342	1406	1454	1536	1600	1706	1748	1648	1724	1824	1242	1324	4 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	1530	1612	1654	2	2				
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à	Ē	San Nicolas Island,			T) - Ad	- - -	0806		1142			0754						0630	1036	1200	0630	0724	9060	0954	1054	124	306	2				
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		CA	.O' West	s in feet.	or Daylight Savings Time.	Ht	0.80 2354 4	1.34	2.71 2106	3.03 2248	3,36	-0.49 1954	-0.43 2024	-0.07 2112	0.19 2136	0.81 2224	1.15 2254	1.82 2354	2.12	2.42 1906	3.02 2324	3.38	-0.18 1912	.0.32	-0.22 2042	0.02 2118	0.36 2154	0.78 2236	1.24 2324	•		
*00	***		30.0	ڃ.	for Da		1742 0.80 2354 4	1818 1.34	1642 2.71 2106	1806 3.03 2248	1854 3.36	1348 -0.49 1954	1418 -0.43 2024	1512 -0.07 2112	1530 0.19 2136	1618 0.81 2224	1636 1.15 2254	1730 1.82 2354	1748 2.12	1730 2.42 1906	1824 3.02 2324	1848 3.38	1254 -0.18 1912	1400 -0.32 1942	1442 -0.22 2042	1516 0.02 2118	1554 0.36 2154	1636 0.78 2236	2324	•		
1004	1675 C2161	Island,	1190 30.0"	and loss in	for Da	Ht	1742 0.80 2354 4	1818 1.34	1642 2.71 2106	1806 3.03 2248	1854 3.36	-0.49 1954	1418 -0.43 2024	1512 -0.07 2112	1530 0.19 2136	1618 0.81 2224	1636 1.15 2254	1730 1.82 2354	1748 2.12	1730 2.42 1906	1824 3.02 2324	1848 3.38	1254 -0.18 1912	1400 -0.32 1942	1442 -0.22 2042	1516 0.02 2118	1554 0.36 2154	1636 0.78 2236	1.24 2324			
4004 4004	+>>- c3LB:		1190 30.0"	nighs, and lows in	- Add one hour for Da	Time Ht Time	3.64 1742 0.80 2354 4	3.04 1818 1.34	1642 2.71 2106	-0.02 1806 3.03 2248	-0.28 1854 3.36 4.44 1312 0.45 1020	4.76 1348 -0.49 1954	1418 -0.43 2024	4.59 1512 -0.07 2112	4.37 1530 0.19 2136 4.07 1654 0.48 2154	1618 0.81 2224	3.33 1636 1.15 2254	2.52 1730 1.82 2354	2.27 1748 2.12	0.91 1730 2.42 1906	0.35 1824 3.02 2324	1848 3.38	4.33 1254 -0.18 1912	1400 -0.32 1942	4.76 1442 -0.22 2042	4.60 1516 0.02 2118	4.29 1554 0.36 2154	4 3.87 1636 0.78 2236	03 1012 1.54 2324			
\$001 4740H	FAX 0040	Nicolas Island,	30.0	range, highs, and lows in	- Add one hour for Da	Ht Time Ht Time	1148 3.64 1742 0.80 2354 4	1254 3.04 1818 1.34	1000 0.24 1642 2.71 2106	1118 -0.02 1806 3.03 2248	1224 -0.28 1854 3.36	4.76 1348 -0.49 1954	0730 4.81 1418 -0.43 2024	0842 4.59 1512 -0.07 2112	0912 4.37 1530 0.19 2136	1016 3.72 1618 0.81 2224	1054 3.33 1636 1.15 2254	2.52 1730 1.82 2354	1430 2.27 1748 2.12	0936 0.91 1730 2.42 1906	1148 0.35 1824 3.02 2324	1218 0.05 1848 3.38	0554 4.33 1254 -0.18 1912	0010 1.00 1.30 0.32 1912 0236 4 75 1400 0.34 2012	0824 4.76 1442 -0.22 2042	46 0906 4.60 1516 0.02 2118	70 0954 4.29 1554 0.36 2154	75 1054 3.87 1636 0.78 2236	4 3.41 1716 1.24 2324 2 3.03 1012 1.60	50.0		
1004 Jone	**** COLD:	Nicolas Island,	16.0' Horth, 119º 30.0'	nighs, and lows in	- Add one hour for Da	Time Ht Time Ht Time	1148 3.64 1742 0.80 2354 4	0.26 1254 3.04 1818 1.34	1000 0.24 1642 2.71 2106	4.38 1118 -0.02 1806 3.03 2248	4.49 1224 -0.28 1854 3.36	1.38 0648 4.78 1348 -0.49 1954	1.05 0730 4.81 1418 -0.43 2024	0.59 0842 4.59 1512 -0.07 2112	0.45 0912 4.37 1530 0.19 2136	1016 3.72 1618 0.81 2224	0.51 1054 3.33 1636 1.15 2254	0.04 1236 2.52 1730 1.82 2354	0.97 1430 2.27 1748 2.12	3.68 0936 0.91 1730 2.42 1906 3.61 1054 0.66 1806 2.21 2154	1148 0.35 1824 3.02 2324	4.02 1218 0.05 1848 3.38	0554 4.33 1254 -0.18 1912	1 U3 U010 U110 U110 U110 U110 U110 U110	-0.06 0824 4.76 1442 -0.22 2042	-0.46 0906 4.60 1516 0.02 2118	-0.70 0954 4.29 1554 0.36 2154	-0.75 1054 3.87 1636 0.78 2236	62 1154 3.41 1716 1.24 2324	200.00.00.00.00.00.00.00.00.00.00.00.00.		
400t 40aah	FAA 1 23481	Nicolas Island,	16.0' Horth, 119º 30.0'	range, highs, and lows in	for Da	Ht Time Ht Time Ht Time	0554 0.12 1148 3.64 1742 0.80 2354 4	0.26 1254 3.04 1818 1.34	0.054 4.59 0.054 0.35 1442 2.50 1924 0.05 4.42 1000 0.24 1642 2.71 2106	0336 4.38 1118 -0.02 1806 3.03 2248	.77 0454 4.49 1224 -0.28 1854 3.36	1.38 0648 4.78 1348 -0.49 1954	24 0136 1.05 0730 4.81 1418 -0.43 2024	0248 0.59 0842 4.59 1512 -0.07 2112	0324 0.45 0912 4.37 1530 0.19 2136	.87 0424 0.41 1018 3.72 1618 0.81 2224	0500 0.51 1054 3.33 1636 1.15 2254	.37 USH2 U.06 1130 2.92 1706 1.19 2.321 .02 0642 0.04 1236 2.52 1730 1.82 2354	31 0754 0.97 1430 2.27 1748 2.12	0054 3.68 0936 0.91 1730 2.42 1906	39 0354 3.74 1148 0.35 1824 3.02 2324	97 0506 4.02 1218 0.05 1848 3.38	51 0006 1.59 0554 4.33 1254 -0.18 1912	. 35 30.0. 00.0. 0.0. 0.00 0.0 0.00 0.00	0218 -0.06 0824 4.76 1442 -0.22 2042	67 0312 -0.46 0906 4.60 1516 0.02 2118	01 0354 -0.70 0954 4.29 1554 0.36 2154	.98 0448 -0.75 1054 3.87 1636 0.78 2236	-0.62 1154 3.41 1716 1.24 2324	3101 50:5 3101 60:0- 0100 31		

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TABLE 21. San Nicolas Island Tides, June 1994

					_	<u> </u>	'AP	W	CV	VP.	<u>NS</u>	TI	<u>M 7</u>	66	<u>7 </u>		_										
			a Time.	ī		1.47	4.4	1.63	5 6 + +	5.08	5.15	5.07	4.91	4.27		1.52	99.0	5 41	5. 77	70 0	6.03	92 5	5.33 4.28	9 -	:	1 61	ı.
			Savings Time	T. Be		2312	1754	1824	1024	1954	2024	2130	2206	2330	7000	2206	2324	1754	1842	2017	2054	2142	2230	2354	į	2106 2236	
	Lest	in feet.	Dayfight	ĭ	;	4.03	1.29	- .	1.63	1.79	1.05	1.98	2.06	2.20	2.17	4. T6	4.56	<u> </u>	64.1	55.1	1.53		20.	1.92	1 98	3 98 4.09	
nd, CA	. 30.0° West	loss in	ur for 0	_ = =			1124				1424															1530	
June 1994 colas Island,	North, 119º	highs, and lows	Add one hour for	¥		1.71	2.06		3.04	3 = 0	3.16	3.22	3.26	2 L	3 53	0.66	0.98	3 03	3.23	3.4	3.73	3.0	3.05	3.89	3 92		
June San Nicolas	16.0' Nor	_	ŧ		;	1030	0548	0654	0824		0936					0836							1212			0830	
	330 16	Tidal range	Standard Time (PST)	ž	;	3.16 2.93		0.61	6.05	67.0	-0.46 0.57	09	0.56	0.25	00	3.33	2.99	91.0	9 46	. c	÷	1.37		0.30	0 20	3 53 2 98	ı
		-	andard	_ _ _ _	į	0306	0012				0324												0454			0212	
			Pacific St	Range	,	3.32	3.4	4.02	5 00	5.37	5 61	5.67	5.46	4.52	3 57	3.50	3.68	5.23	6.24	7 43	2,46	7.13	6 4 7	4.46	3.72	3.28 2.92	ı •
			g.	Dat e	•	- ۰	1 m	+ L	n ve	, ~	6 0 0	, 5	= :	2 5	<u> </u>	9	<u>~ «</u>	2 2	2	- 2	23	54	\$ \$	27	28	3 5	
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		_			=	£ =		= 9	<u> </u>	· 20	.83	2	១៩	± !	ū	2.5	80			±	86		· 25.	مِ	90	5	
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			3			0 4	,	•		+	60 60	. 60	6 0 4			+ 0	۰.		D T	7	* ^	. +		•			
			ž	_ = =	205	2230		1836	1930	1954	2018	2118	2224	2254	2340	2054	2336		1854	1942	2024	2154	2248	2336		2154	
	Lest		ž	¥			; = :		80.		1.37 2018		28. E	2		£.			26						2024	*	
EJ.	90 30 0 Nest		ž		3.37	3.61 50	= :	0.67	90.	1.21		1.68	2.05	2.20	2.43	£.6	4.15	4.63	0.92	1.05	 5 5	53	5.7	- , 2 2	3.67 2024	3.84	
EJ.		and lows in feet.	ž	ž	18 1542 3.37	.07 1642 3.61	11.4 906 4.11	39 1224 0.67	36 1324 1.05	.33 1354 1.21	1.37	12 1512 1.68	03 1542 1.85	89 1654 2.20	07 1918 2.41	28 1536 3.34	.55 1654 4.15	.67 1742 4.63	52 1242 0.92	.61 1330 1.05	66 1424 1 19	61 1554 1 53	.56 1648 1.73	54 1748 1.93	.10 1446 3.67 2024	33 1548 3.84	
May 1994 Nicolas Island, CA	North,	highs, and lows in feet.	- Hdd one hour tor Uaylight	Time Ht	-0.18 1542 3.37	0.07 1642 3.61	0.47 1806 4.11	3.39 1224 0.67	3.36 1324 1.05	3.33 1354 1.21	.28 1418 1.37 .21 1442 1.52	3.12 1512 1.68	3.03 1542 1.85	2.89 1654 2.20	3.07 1918 2.41	28 1536 3.34	0.55 1654 4.15	0.67 1742 4.63	3.59 1200 0.80	3.61 1330 1.05	3.66 1424 1 19	3.61 1554 1.53	3.56 1640 1.73	3.54 1748 1.93	-0.10 1446 3.67 2024	0 33 1546 3 84	
May 1994 San Nicolas Island, CA	o 16.0' North,	highs, and lows in feet.	- Hdd one hour tor Uaylight	e Ht Time Ht	0842 -0.18 1542 3.37	1048 0.07 1642 3.61	1142 0.47 1806 4.11	0612 3.39 1224 0.67	0746 3.36 1324 1.05	0024 3.33 1354 1.21	0854 3,28 1418 1,37 0942 3,21 1442 1,52	1016 3.12 1512 1.68	1054 3.03 1542 1.85	1242 2.89 1654 2.20	1342 2.92 1734 2.36	0836 0.28 1536 3.34	1024 0.55 1654 4.15	1112 0.67 1742 4.63	0.016 3.39 1.200 0.60	0618 3.61 1330 1.05	0912 3.66 1424 1.19	1054 3.61 1554 1.53	1146 3.56 1648 1.73	1246 3.54 1748 1.93	0754 -0.10 1448 3.67 2024	0848 0 33 1548 3 84	
May 1994 San Nicolas Island, CA	o 16.0' North,	highs, and lows in feet.	- Hdd one hour tor Uaylight	Ht Time Ht Time Ht	4 20 0842 -0.18 1542 3.37	3,78 0948 0,07 1642 3.61	3 42 1142 0.47 1806 4.11	0.98 0612 3.39 1224 0.67	0.25 0746 3.36 1324 1.05	-0.01 0824 3.33 1354 1.21	3.28 1418 1.37 3.21 1442 1.52	-0.39 1018 3.12 1512 1.68	-0.38 1054 3.03 1542 1.85 -0.30 1148 2.04 1512 2.03	-0 18 1242 2.89 1654 2.20	-0.03 1342 2.92 1734 2.30 0 13 1442 3.07 1918 2.41	3 72 0836 0.28 1536 3.34	3.72 0930 0.72 1010 3.71	3.29 1112 0.67 1742 4.63	0.35 0616 3.39 1200 0.60 -0.34 0.218 3.52 1242 0.92	-0.92 0616 3.61 1330 1.05	-1 32 0912 3.66 1424 1 19	-1.50 1054 3.61 1554 1.53	-1 30 1146 3.56 1648 1.73	-0.96 1246 3.54 1748 1.93	0754 -0.10 1448 3.67 2024	3 60 0848 0 33 1548 3 84	
May 1994 San Nicolas Island, CA	o 16.0' North,	highs, and lows in feet.	Hdd one hour tor Uaylight	Ht Time Ht Time Ht	0106 4 20 0842 -0.18 1542 3.37	0230 3,78 0948 0.07 1642 3.61	0512 3 42 1142 0.47 1806 4.11	0036 0.98 0612 3.39 1224 0.67	0154 0.25 0748 3.36 1324 1.05	77 0230 -0.01 0824 3.33 1354 1.21	-0.2) 0854 3.28 1418 1.37 -0.34 0942 3.21 1442 1.52	22 0400 -0.39 1018 3.12 1512 1.68	10 0436 -0.36 1054 3.03 1542 1.85	52 0554 -0 18 1242 2.89 1654 2.20	08 0646 -0.03 1342 2.92 1734 2.36 04 0736 0.13 1442 3.07 1918 2.41	44 0046 3 72 0836 0.28 1536 3.34	29 0212 3.72 0930 0.72 1010 3.11 60 0348 3.27 1024 0.55 1654 4.15	96 0506 3.29 1112 0.67 1742 4.63	76 0024 0.35 0616 3.39 1200 0.60	76 0206 -0.92 0616 3.61 1330 1.05	31 0254 -1 32 0912 3.66 1424 1 19	20 0346 -1 50 1054 3.61 1554 1 53	59 0524 -1 30 1146 3.56 1648 1.73	72 0612 -0.96 1248 3.54 1748 1.93	0036 4 17 0754 -0.10 1446 3.67 2024	51 0142 3 60 0848 0 33 1548 3 84	

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TABLE 22. San Nicolas Island Tides, July 1994

TABLE 23. San Nicolas Island Tides, August 1994

1 10 10 10 10 10 10 10	San Micolas Island, CA Tidal range, highs, and loss in feet. Date Range Tise Ht Tise Ht Tise Ht Tise Ht Tise Ht 1 356 0012 0.95 0646 2.79 1042 2.41 1716 4.52 2 4 26 0054 0.55 0.054 3.02 1149 2.34 1754 4.81 3 5 0012 0.95 0646 2.79 1042 2.41 1716 4.52 4 5 10 0206 - 0.00 0054 3.00 1149 2.34 1754 4.81 5 5 10 0206 - 0.00 0054 3.00 1149 2.34 1754 4.81 5 5 10 0206 - 0.10 0054 3.67 1149 2.34 1754 4.81 6 5 90 0206 - 0.11 0054 3.00 1149 2.34 1754 4.81 6 5 90 0206 - 0.11 0054 3.00 1149 2.30 1.82 6 5 90 0206 - 0.11 0054 3.00 1149 2.30 1.82 6 5 90 0206 - 0.11 0054 3.00 1149 2.20 1.82 6 5 90 0206 - 0.11 0054 3.00 1.12 2.14 5.12 6 5 90 0206 - 0.11 0054 3.00 1.12 2.14 5.12 6 5 90 0206 - 0.12 1002 4.40 1.25 2.44 5.12 6 5 90 0206 - 0.13 1002 4.40 1.35 1.30 1.80 6 5 90 0000 0.20 1.10 4.30 1.80 1.12 2.14 6.51 6 6 7 1154 4.67 1.85 1.12 1.12 2.14 8.51 6 6 7 1154 4.67 1.85 1.12 1.12 2.14 8.51 6 7 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	San P 1 330 16.0 Tidal range, Date Range Time Ht Time 1 3.58 0012 0.95 075 3 4.88 0136 0.20 075 4 5.41 0206 0.09 075 4 5.41 0206 0.09 075 4 5.41 0206 0.01 095 6 5.98 0136 0.146 095 7 5.92 0136 0.146 095 8 5.77 0406 0.136 1111 1 4 06 0530 0.22 1111 1 4 0 0536 0.67 115 1 4 135 0342 2.04 0023 1 5 5 7 0012 0.05 063 1 6 5 2 7 0012 0.05 063 2 1 5 5 7 0014 0.33 093 2 2 4 90 0148 0.75 105 2 5 7 0014 0.33 103 2 7 0018 0.75 105 2 7 0018 0.75 105 2 8 2 7 0048 2 91 066 2 9 0538 2 7 0068 2 9 0538 2 7 0069 3 1 3 6 0018 0 71 065 3 1 3 6 0018 0 71 065 3 1 3 6 0018 0 71 065 3 1 3 6 0018 0 71 065 3 1 3 6 0018 0 71 065 4 9 0018 0 71 065 4 9 0018 0 71 065 4 9 0018 0 71 065 4 9 0018 0 71 065 4 9 0018 0 71 065 4 9 0018 0 71 065 4 9 0018 0 71 065	Son Microlan Listen CA 139 16.0° Horth, 1190 30.0° uest Tidal range, highs, and loss in feet. Date Range Time Ht Time Ht Time Ht Time Ht Time Ht 1 3.58 00012 0.95 0648 2.79 1042 2.41 1718 4.52 2 4 76 0035 0.05 0754 3.05 1148 2.19 1178 5.30 3 4 88 0136 0.05 0754 3.05 1148 2.19 1178 5.00 1 5 50 0136 0.05 0754 3.05 1148 2.19 1178 5.00 1 5 50 0136 0.05 0754 3.05 1148 2.19 1178 5.00 1 5 50 0136 0.05 0754 3.05 1148 2.19 1178 5.00 1 6 50 0136 0.05 0754 3.05 1148 2.19 1178 5.00 1 7 5 50 0105 0.01 0105 118 4.59 1191 2.25 2149 5.21 1 7 5 50 0105 0.02 1118 4.59 1191 2.25 2149 5.21 1 7 5 50 0105 0.02 1118 4.59 1192 2.19 5.20 1 8 5 7 0106 0.02 1118 4.59 1192 2.20 1 8 5 7 0106 0.02 1118 4.59 1192 1.35 2006 5.55 1 8 5 7 0106 0.03 0.01 118 4.59 1192 1.35 0.01 1 9 6 7 10 012 0.03 0.01 118 4.59 1192 1.35 0.01 1 1 6 10 012 0.03 0.01 118 4.59 1192 1.35 0.01 1 7 7 010 0.01 0.01 0.01 0.01 0.01 1 8 5 7 000 0.01 0.01 0.01 0.01 0.01 1 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	♦661 glul
330 16.0' Horth, 1199 30.0' West. Tidal range, highs, and loss in feet. Date Range Time Ht T	11del range, highs, and loss in feet. Date Range Time (PSI) - Rdd one hour for Daylight Sovings Time 1 358 00012 0.95 0648 2.79 1042 2.14 1718 Ht. 1 4 26 00012 0.95 0648 2.79 1042 2.14 1718 4 611 1 5 5 00012 0.95 0648 2.79 1042 2.14 1718 4 611 1 5 5 00012 0.95 0648 3.67 1146 2.14 1718 4 611 1 6 10 00012 0.95 0648 3.67 1146 2.14 1718 4 611 1 6 10 00012 0.95 0648 3.67 1146 2.14 1718 4 611 1 7 5 90 0006 0.09 00074 3.69 1150 1.99 1918 5.19 1 8 5 5 00016 0.09 00074 3.69 1150 1.99 1918 5.19 1 9 1 9 10 0000 0.01 1 10 0007 1.10 1.10 1.10 1	1 1 dai range. 1 1 dai range. 1 1 3.58	1 350 16.0° Horth, 1190 30.0° Meat Tidal range, highs, and loss in feet. Date Range Time Ht Time Ht Time Ht Time Ht Time Ht 1 350 00012 0.95 0648 2.79 1042 2.41 1718 4.52 2 4 26 0002 0.95 0044 2.79 1042 2.41 1718 4.52 3 4 60 0012 0.95 0044 2.79 1042 2.41 1718 4.52 3 5 50 0025 0.91 0064 3.45 1196 2.19 1196 2.91 4 5 5 0002 0.95 0044 3.45 1196 2.94 1042 5.91 5 5 00 035 0.04 0.05 0744 3.03 1146 2.94 1042 5.91 6 5 90 0306 0.04 0912 1091 3.91 1.95 2.00 5.95 6 5 90 0306 0.04 0912 1.91 1.92 2.94 1.95 5.90 6 5 90 0306 0.04 0912 1.91 1.92 2.94 1.92 5.91 6 5 90 0306 0.04 0.091 1.92 2.94 1.92 5.91 6 5 90 0306 0.04 0.091 1.92 2.94 1.92 5.91 6 6 9 9 9 0010 0.13 1.92 2.94 0.92 5.91 6 6 9 9 9 0010 0.13 1.92 2.94 0.92 5.91 6 6 9 9 0010 0.13 1.92 2.94 0.92 5.91 6 7 0012 0.04 0.93 1.93 1.93 1.93 1.93 1.93 6 8 9 0012 0.93 0.93 1.93 1.93 1.93 1.93 6 9 9 9 9 0012 0.93 1.93 1.93 1.93 1.93 1.93 6 9 9 9 9 0012 0.93 1.93 1.93 1.93 1.93 1.93 6 9 9 9 9 0012 0.93 1.93 1.93 1.93 1.93 1.93 6 9 9 9 9 0012 0.93 1.93 1.93 1.93 1.93 1.93 6 9 9 9 9 0012 0.93 1.93 1.93 1.93 1.93 1.93 6 9 9 9 9 0012 0.93 1.93 1.93 1.93 1.93 1.93 6 9 0012 0.93 1.93 1.93 1.93 1.93 1.93 6 9 0012 0.93 1.93 1.93 1.93 1.93 1.93 6 9 0012 0.93 1.93 1.93 1.93 1.93 1.93 6 9 0012 0.93 1.93 1.93 1.93 1.93 1.93 6 0012 0.93 1.93 1.93 1.93 1.93 1.93 6 0013 0.93 1.93 1.93 1.93 1.93 1.93 6 0013 0.93 1.93 1.93 1.93 1.93 1.93 6 0013 0.93 1.93 1.93 1.93 1.93 1.93 6 0013 0.93 1.93 1.93 1.93 1.93 1.93 6 0013 0.93 1.93 1.93 1.93 1.93 1.93 6 0013 0.93 1.93 1.93 1.93 1.93 1.93 1.93 6 0013 0.93 1.93 1.93 1.93 1.93 1.93 1.93 6 0013 0.93 1.93 1.93 1.93 1.93 1.93 1.93 6 0013 0.93 1.93 1.93 1.93 1.93 1.93 1.93 6 0013 0.93 1.93 1.93 1.93 1.93 1.93 1.93 6 0013 0.93 1.93 1.93 1.93 1.93 1.93 1.93 6 0013 0.93 1.93 1.93 1.93 1.93 1.93 1.93 6 0013 0.93 1.93 1.93 1.93 1.93 1.93 1.93 1.93 6 0013 0.93 1.93 1.93 1.93 1.93 1.93 1.93 1.93 1	San Micolas Island, CA
Tidal range, highe, and loss in feet.	Tidal range, highs, and loss in feet.	Tidal range, Tidal range, Tidal range, Tidal range, Tidal range Tidal range, Tidal	Date Range Time Ht Time	33º 16.0' Horth, 119º 30.0' West
Date Ronge Time Ht Time	Date Range Time Ht Time Time Ht <th< th=""><th>Date Range Time Ht Time 1 3.58 00034 0.55 0744 2 4.26 00034 0.55 0744 3 4.88 0136 -0.09 0025 5 5.80 0236 -0.14 0915 6 5.98 0236 -0.14 0915 7 5.92 0236 -0.14 0915 10 4.37 0500 0.22 11118 11 4 08 0530 0.67 115 12 3 9 0 0010 3.63 0.01 14 4 35 0040 3.61 0.02 15 5.80 0530 3.01 0036 16 5.21 0042 2.04 0036 17 5 87 0054 -0.31 0716 18 6.21 0142 3.08 0711 18 6.21 0142 -0.54 005 21 5.70 0012 0.05 22 4 90 0348 -0.53 005 23 4 90 0348 -0.33 005 24 3.73 0448 0.75 105 25 2 71 0542 1.61 1.18 1.13 26 2 71 0542 1.61 1.18 27 2 2 0048 2 91 060 29 0 0530 2.99 101 31 3 86 0018 0.71 065 31 3 86 0018 0.71 065 31 3 86 0018 0.71 065</th><th>Date Ange Tise Ht Tise</th><th>Tidal range, highs, and lows in feet.</th></th<>	Date Range Time Ht Time 1 3.58 00034 0.55 0744 2 4.26 00034 0.55 0744 3 4.88 0136 -0.09 0025 5 5.80 0236 -0.14 0915 6 5.98 0236 -0.14 0915 7 5.92 0236 -0.14 0915 10 4.37 0500 0.22 11118 11 4 08 0530 0.67 115 12 3 9 0 0010 3.63 0.01 14 4 35 0040 3.61 0.02 15 5.80 0530 3.01 0036 16 5.21 0042 2.04 0036 17 5 87 0054 -0.31 0716 18 6.21 0142 3.08 0711 18 6.21 0142 -0.54 005 21 5.70 0012 0.05 22 4 90 0348 -0.53 005 23 4 90 0348 -0.33 005 24 3.73 0448 0.75 105 25 2 71 0542 1.61 1.18 1.13 26 2 71 0542 1.61 1.18 27 2 2 0048 2 91 060 29 0 0530 2.99 101 31 3 86 0018 0.71 065 31 3 86 0018 0.71 065 31 3 86 0018 0.71 065	Date Ange Tise Ht Tise	Tidal range, highs, and lows in feet.
Date Range Time Ht Time Time Ht Time Ht	Date Range Time Ht Time	Date Range Time Ht Tim	Date Ronge Time Ht Time	Pacific Standard Time (PST) - Add one hour for Daylight Savings Time
1 3.58 0012 0.95 0648 2.79 11042 2.41 1718 4.52 2 4.26 0084 0.55 0754 3.03 1146 2.34 1778 4 81 3 4.18 0.20 0.024 0.35 174 3.05 136 2.19 1842 5.08 6 5.96 0.026 -0.31 0.042 3.16 136 1.77 1842 5.09 6 5.96 0.036 -0.46 0.99 149 199 1910 5.31 7 5.92 0.036 -0.46 0.992 4.10 151 2.20 1910 5.52 2030 5.52 2030 5.52 2030 5.52 2030 5.52 2030 5.52 2030 5.52 2030 5.52 2030 5.52 2030 5.21 1042 4.77 1070 1.17 1071 1.17 1074 4.77 1070 1.17 1.17 </th <th> 1 3.58 0012 0.95 0646 2.79 1042 2.41 1718 4.52 2 4 26 0054 0.55 0742 3.03 1146 2.34 1718 4.52 3 4 88 0.36 0.05 0.05 0.05 0.15 0.15 0.15 0.15 4 5 41 0.206 -0.09 0.054 3.46 1316 1.99 1918 5.33 5 5 90 0.206 -0.04 0.0942 4.10 1512 1.36 2.105 5.65 5 5 90 0.206 -0.04 0.0942 4.10 1512 1.36 2.105 5.46 6 5 5 90 0.206 -0.04 0.012 4.10 1512 1.36 2.20 5.55 9 4 93 0.930 -0.14 0.0942 4.10 1512 1.36 2.20 5.55 10 4 37 0.500 0.22 1118 4.57 1036 1.13 2.216 4.57 11 3 5 90 0.016 0.02 1118 4.57 1036 1.13 2.216 5.21 12 3 59 0.016 0.02 1118 4.57 1030 113 2.318 4.25 11 4 15 0.017 0.05 0.057 1.17 1.254 4.71 1.954 1.12 12 3 59 0.016 0.02 1.118 4.57 1.02 4.75 2.10 0.91 14 4 15 0.017 0.05 0.057 1.054 4.75 2.16 0.91 15 2 00 0.530 3.01 0.057 0.057 1.054 4.75 2.16 0.91 16 6.21 0.142 0.05 0.056 0.34 1.12 1.62 1.91 5.46 17 5 2 00 0.340 0.034 0.034 0.034 1.35 1.15 1.05 2.15 5.66 18 6.21 0.142 0.05 0.056 0.34 1.35 1.16 1.05 2.21 5.57 19 6.27 0.018 0.05 0.057 0.056 0.34 1.35 1.05 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.057 0.0</th> <th> 3.58 0012 0.95 0.648 2.79 1042 2.41 1718 4 4 5.41 0.206 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28 2.61 0248 2 60 0642 2.38 1334 7 01 4219 1. 29 2 99 0536 2 72 0812 2 66 1524 4 05 2330 1. 30 1.60 0630 2.99 1018 2.67 1636 4 27 31 3 86 0018 0 71 0654 3 25 1130 2 46 1730 4	20 2.61 0248 2 60 0042 2.38 1337 7.01 2210 1.2 20 2 99 0536 2 72 00812 2 66 1524 4 05 2330 1. 30 1.60 0630 2.99 1018 2.67 1536 4 27 31 3 86 0018 0 71 0654 3 25 1130 2 46 1730 4	28 2.61 0248 2 50 0042 2.38 1337 7.01 2210 1.28 1337 7.01 2210 1.28 1337 7.01 2210 1.28 1337 7.01 2210 1.28 1330 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 130 1.28 13	20 2.61 0248 2.50 0042 2.38 1337 7.01 2210 1.22 2.99 0538 2.72 0012 2.66 124 4.05 2330 1.50 0.65 0.05 0.05 0.05 0.05 0.05 0.05 0	97 0500 -0.29 1110 4.20 100 050 0
29 2 99 0336 2 72 0812 2 60 1327 1 03 230 1. 30 1.60 0630 2.99 1018 2.67 1636 4 27 31 3 86 0018 0 71 0654 3 25 1130 2 46 1730 4	29 2 99 2 0356 2 7 2 080 2 2 7 3 2 2 3 0 1 3 0 1 6 0 0630 2 99 1018 2 67 1130 2 46 1730 4 3 1 3 86 0018 0 71 0654 3 25 1130 2 46 1730 4	29 2 99 2 0356 2 7 2 080 2 2 7 0 3 2 3 0 1 6 1 6 1 7 1 0 6 5 4 1 3 2 6 1 1 3 0 4 6 1 7 3 0 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	29 2 99 0336 2 72 0812 2 80 1350 2 330 30 1.60 0630 2.99 1018 2.67 1636 4.27 330 4 31 3 66 0018 0 71 0654 3 25 1130 2 46 1730 4	42 0612 0 66 1236 4 14 1854 1 26
30 1.60 0530 2.99 1018 2.87 1530 4 21 31 3 86 0018 0 71 0654 3 25 1130 2 46 1730 4	30 1.60 0530 2.99 1018 2.87 1530 4 21 3 86 0018 0 71 0654 3 25 1130 2 46 1730 4	30 1.60 0530 2.99 1018 2.67 1530 4 2.130 2 46 1730 4	30 1.60 0530 2.99 1018 2.67 1530 4 2.130 2 46 1730 4	47 UDIZ U.00 1230 1111 UDI 1110 UDIZ UDIZ UDIZ
201 2 2 201 12 1 1000 11 1 1000 11				45 0010 5.14 0012 1.15 1417 4.07 2142 1
		!		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
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TABLE 25. San Nicolas Island Tides, October 1994

			NA	W	CV	P	<u>1S</u> .	TΝ	170	667									_						
ú																									
e I	ž	4.66	4.06	4.76	18	3.79	0.01	0.17	0.23	0.27	4.35	4 28	8	3.62	3.0	3.15	5	0.82	0.85	0.00	Ž ;	5	4.16		
October 1994 licolas Island, CA North, 1190 30.0' West highs, and lows in feet. Add one hour for Daylight Savings Time	 	1830	1954	2048	2224	2324	1924	2206	2312	2354	1854	1936 2018	2054	2130	2248	2336	1854	2006	2112	2206	2254	2336	1854		
Hest n feet. Dayligh	Ŧ	1.46	0.38	0.06 35	-0.46	-0.40	5.14	6 4	4.34	4.35	96.0	0.64	0.22	<u>*</u>	0.2	0.35	0.4 4.53	÷.	3.85	3.68	3.70	5 6	0 +3		
r 1994 Island, CA 1190 30.0' West and lows in feet	<u></u>	1242	1406	1536	1624	1812	1148	1424	1554	1706 1806	1312	1348	1454	1524	1642	1718	1054	119	1254	1430	1554	7081	1312		1
October 199, ficolas Islar Marth, 1190 highs, and I Add one how	ž	4.14	4.93	5.29 5.56	5.69	5.67	2.05	2.53	2.31	1.87	4.63	4.03 50.3	5.06	5.03 6.03	2.00	1.86	2 4	2.70	2.89	2.78	2.36	= =	4.93		
z -	- - - -	0654	0742	0818	0924	1054	0530	0836	1018	1230	0654	0724	0812	0636	0924	0954	1024	0530	9020	0912	1042	135	0636		
San 330 16.0 Tidal range Pacific Standard Time (PST)	ž	0.39	0.27	0.37		1.63	3.45	 	3.74	4. 4 8. 6	0 38	0.55	66.0	1.23	~	1.95	7.7	2.90	3 04	3.31	3.63	20.4	0.70		
andard	<u></u>	0030	0142	0218	0324	0406	0042	0348	0454	0542	0045	0 - 0	0206	0230	0318	0348	0019	0200	0342	0436	0206	0536	0010		
cific St	Range	4.27	99	5.35 5.93	6.16	69.63 20.63	5.13	4.24	4.12	4.08 8.8	4.25	4.27 4.58	+ 0 +	4 96	. 4	1.51	 	3.3	3.80	2 88	2.96	3.32	4.58		
8	Date	- ^	1 W	4- N	•	~ •	•	2 =	2	<u></u>	5	9 7	.	6 6	2 2	22	5 2	52	92	23	58	2 5	3 E		
		_	_	_		_				_						_		_	-	_	_	_	_	 _	
																									İ
⊕ •	ž .	5.4	5.35	5.24	5.5	4 .0	0.56	0.52	0.08	: !	5.07	5.05	4.09 6.00 7.00 7.00	35	00 +	2 25		7.7	7.5	- 0)			
Savings Time	i.	1854	2012	2054	2224	2318	1942	2118	2348		1906	1948	2024	2136	2212	2336		1942	2112	7777	2400	3			
	-	- 1.79 - 1.79 - 1.79		0.69					4.73			1.00													
994 o 30.0° loss ir our for	i ne	1254	1418	1454	1624	1718	1218	1324	1612	1724	1230	1348	1500	1536	1618	1736	1830	1142	242	904	1648	1742			
September 1994 Nicolas Island, Cf North, 1190 30.0' highs, and loss i	ž (3.79	S P	4.69	5.11	5.18	. 70	2.15	2.45	2.09	÷ 6	4.55	~ .	4.85	1.83	e 6	+	2.30	2.61	99.7	2 45	66 -			
September 1994 San Micolas Island, CA 16.0' Morth, 119º 30.0' ange, highs, and lows in	T : 0	0742	90.00	0854	0954	1036	0548	0648	1012	1130	0654	0754	0824	0912	0942	1006	1106	0518	0542	0730	1106	1200			
a	ž (0.39	9 +	T 6	0.35	7.0	3.48	3.10	3,39	3.74	-0.08	0.05	0.12 3.5	9.0	0.95	5 3	86.1	2.90	2.72	2.90		20.0			
I andard	Tine		0224				0030		0354			0154					0454			0512	940	0630			
33 Lidal Pacific Standard Time	Range	5.8	5.38 5.49	5.35	£. 4 52. 4	4.83	4.42	4.28	4.39	2.84	5.15	5.18	4.77	4.29	4.24	4.05 2.75	3.37	3.00	2.79	2.04	5. L	2.44			
Pac		- ~ .																	2						

TABLE 26. San Nicolas Island Tides, November 1994

TABLE 27. San Nicolas Island Tides, December 1994

					-		N	A¥	VC.	<u>w</u>	KV!	T	M /	90	<u></u>	_	_		_			_	_	=		-	
				Add one hour for Daylight Savings Time.	ĭ	3.79					0.36				3.25					0.11		1.15			•	3.64	m
				ht Savi	<u> </u>	2048	2224	2318	1830	1918	2018	2218	2354	2010	2054	2130	2230	2306	316.3	1824	1906	2048	2148	2354	}	2042	2130
	•	30.0' West	n feet.	Daylig	ž	-1.10	- 1-	-1.34	-1.03 5.22	4.57	6 6 9 8	3.01	2.99	3.08	-0.26	-0.43	-0.54	-0.49	-0.16	4.39	3.38	2.92	2.74	۲۰۵۰	3.40	-1.27	1.5
66	land, CA	30.00	- 680	our for	=	1436	1606	1654	112	1206	1312	1612	9 + 9	1936	1442	1506	1606	1636	1748	1106	1254	1430	1624	906	1954	1430	1212
December 1994	Nicolas island	North, 1190	highs, and lows in feet	d one h	ž	6.03	6.30 6.30	6.13	5.7 19.1	2.07	2.14	9:	0.67	0 20	5.7	5.25	5.3	5.22	4.73	2.18	2.72	1.82	1.22	20.0-	-0.83	6.02	6.22
Dec	San Nic			F	<u> </u>	0718	0848	0630	0518	0624	0742	1054	1254	1336	0718	0748	0.00	0916	1024	0524	0748	0630	1054	1254	1342	9020	0754
		330 16.0	Tidal range,	Time (PST)	ž	33	.	1.57	. 6 . 8	3.01	3,00 60 60 60 60 60	4.22	49.	4.82	90	06-	1.93	7.97	2.10	3.47	3.57	00.4	4.35	 	5.67	1.57	~
			-	andard	<u>.</u>	2110	0242	0330	0424 0012	0112	0212	0412	0536	0612	0112	0142	0242	0312	0436	0054	0106	0248	0342	05.30	0190	0048	® + •
				Pacific Standard Time	Range	7.13	7.78 7.78	7.47	5.83 5.83	4.69	3.53	3.03	3.97	4.54 7.00	5.40	5.67	5.05	5.71	4 93	4.28	3.48 9.5	2.86	3.13	27.5	6.50	7.29	7.73
				å	Dat.	- (v 6	•	v v	~	60 0	2:	15	<u> </u>	5	91	- =	<u>6</u> 6	7 5	55	, 33	52	9 ;) 8	62	30	Ē
							_										_	_			_	_			_	_	
			-							_		•					_						_			_	
				. T. B.O.	H	4.23	60.4	3.92	5. 5	-0.41	0.24	0.49	0.94		3.54	3.50	3.37	3.20	ر ا	0.19	0.39	0.77	0.92	.05	5	3.68	
				Savings Time.	Time Ht		•	2230 3.92	_			2218 0.49								1824 0.19		2054 0.77					
		Lest	feet.			1954 4	2136 4	2230 3	2330	1900	2006	2218	2354	70.0	2018	2054	2206	2248	7330	1824	1912	2054	2148	2242	2330	1954 3.	
*	ind, CA	30.0	.5	for Baylight	1 8 8	-0.20 1954 4	2136 4	-1.10 2230 3	-1.00 2330 3	5.23 1900	4.68 2006 4.18 2112		3.60 2354	3.58	0.11 2018	-0.08 2054	-0.20 2130	-0.22 2248	0.13 2330	4.62 1824	4.29 1912	2054	3.28 2148	3.24 2242	2330	-0.61 1954 3.	
aber 1994		1190 30.0	.5	one hour for Daylight	Ht Time	-0.20 1954 4	.02 1530 -1.00 2136 4	311 1618 -1.10 2230 3	1800 -0.75	1130 5.23 1900	1354 4.18 2112	1524 3.82 2218	1754 3.60 2354	1848 3.58	1418 0.11 2018	1442 -0.08 2054	1548 -0.24 2206	1624 -0.22 2248	1705 -0.13 2330	1036 4.62 1824	1118 4.29 1912	1330 3.53 2054	1506 3.28 2148	52 1642 3.24 2242	78 1754 3.35 2330 05 1854 3.52	65 1348 -0.61 1954 3.	
November 1994	Nicolas Island,	Morth, 119º 30.0'	, highs, and lows in	- Add one hour for Baylight	Ht Time Ht Time	38 1354 -0.20 1954 4	6.02 1530 -1.00 2136 4	6.11 1618 -1.10 2230 3	5.99 1706 -1.00 2330 3 5.69 1800 -0.75	2.13 1130 5.23 1900	2.36 1236 4.68 2006 2.40 1354 4.18 2112	3.82 2218	1.19 1754 3.60 2354	0.75 1648 3.58	5.07 1418 0.11 2018	5.17 1442 -0.08 2054	5.23 1548 -0.20 2130 5.23 1548 -0.24 2206	5.18 1624 -0.22 2248	5.06 [706 -0.13 2330	2.42 1036 4.62 1824	2.58 1118 4.29 1912	2.56 1330 3.53 2054	2.16 1506 3.28 2148	1.52 1642 3.24 2242	1754 3.35 2330	5.65 1348 -0.61 1954 3.	
November 1994		1190 30.0	range, highs, and lows in	(PSI) - Add one hour for Daylight	Time Ht Time Ht Time	75 0706 5.36 1354 -0.20 1954 4	0818 6.02 1530 -1.00 2136 4	0854 6.11 1618 -1.10 2230 3	1036 5.69 1706 -1.00 2330 3	0524 2.13 1130 5.23 1900	0642 2.36 1236 4.68 2006 0816 2.40 1354 4.18 2112	0954 2.14 1524 3.82 2218	1216 1.19 1754 3.60 2354	1306 0.75 1848 3.58	0512 5.07 1418 0.11 2018	0742 5.17 1442 -0.08 2054	0806 5.23 1548 -0.20 2130 0836 5.23 1548 -0.24 2206	0854 5.18 1624 -0.22 2248	1006 4 87 1742 0.13 2330	0436 2.42 1036 4.62 1824	14 0530 2.56 1118 4.29 1912	.47 0830 2.58 1330 3.53 2054	.80 1000 2.16 1506 3.28 2148	21 1112 1.52 1642 3.24 2242	.69 1206 0.78 1734 3.35 2330	23 0636 5.65 1348 -0.61 1954 3.	
November 1994	Nicolas Island,	16.0' Horth, 119º 30.0'	, highs, and lows in	(PSI) - Add one hour for Daylight	Ht Time Ht Time	0706 5.38 1354 -0.20 1954 4	1.04 0818 6.02 1530 -1.00 2136 4	1.26 0854 6.11 1618 -1.10 2230 3	1036 5.69 1706 -1.00 2330 3	3.59 0524 2.13 1130 5.23 1900	3.57 0642 2.36 1236 4.68 2006 3.70 0818 2.40 1354 4.18 2112	2.14 1524 3.82 2218	4.52 1218 1.19 1754 3.60 2354	4.75 1306 0.75 1848 3.58	1.34 0712 5.07 1418 0.11 2018	1.51 0742 5.17 1442 -0.08 2054	1.66 0806 5.23 1518 -0.20 2130 1.80 0836 5.23 1548 -0.24 2206	0854 5.18 1624 -0.22 2248	2.08 0930 5.06 1706 -0.13 2330 2.24 1006 4.87 1742 0.01	3,14 0436 2.42 1036 4.62 1824	0530 2.58 1118 4.29 1912	3.47 0830 2.58 1330 3.53 2054	3.80 1000 2.16 1506 3.28 2148	4.21 1112 1.52 1642 3.24 2242	1206 0.78 1754 3.35 2330	1.23 0636 5.65 1348 -0.61 1954 3.	
November 1994	Nicolas Island,	16.0' Horth, 119º 30.0'	range, highs, and lows in	- Add one hour for Baylight	Ht Time Ht Time Ht Time	4 C 012 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	.02 0216 1.04 0818 6.02 1530 -1.00 2136 4	0254 1.26 0854 6.11 1618 -1.10 2230 3	.00 0342 1.53 0946 5.99 1706 -1.00 2330 3 .44 0430 1.82 1036 5.69 1800 -0.75	.64 0036 3.59 0524 2.13 1130 5.23 1900	.75 0148 3.57 0642 2.36 1236 4.68 2006 94 0306 3.70 0818 2.40 1354 4.18 2.12	3,96 0954 2.14 1524 3.82 2218	.56 0542 4.52 1216 1.19 1754 3.60 2354	.00 0618 4.75 1306 0.75 1848 3.58	.54 0036 1.15 0646 1.93 1542 0.39 1930 .95 0106 1.34 0712 5.07 1418 0.11 2018	25 0136 1.51 0742 5.17 1442 -0.08 2054	.43 0200 1.66 0606 5.23 1516 -0.20 2130 48 0224 1.80 0836 5.23 1548 -0.24 2206	40 0254 1.94 0854 5.18 1624 -0.22 2248	.19 0324 2.08 0930 5.06 1706 -0.13 2330 as 0354 2.24 1006 4.87 1742 0.01	.43 0016 3.14 0436 2.42 1036 4.62 1824	291 0112 3.14 0530 2.58 1118 4.29 1912	.33 UZ12 3.47 U830 2.58 1330 3.53 2054	.86 0354 3.80 1000 2.16 1506 3.28 2148	16 0436 4.21 1112 1.52 1642 3.24 2242	.90 0518 4.69 1206 0.78 1754 3.35 2330	25 0018 1.23 0636 5.65 1348 -0.61 1954 3.	

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TABLE 28. Moonrise and Moonset, Barking Sands, 1994

ons Dept. -5420	Dec. Rise Set h m h m 0539 1706 0646 1806 0750 1910 0850 2014	1034 2217 1119 2314 1159 1237 0008 1314 0100	1351 0151 1428 0241 1507 0331 1548 0422 1631 0512	1718 0602 1806 0651 1857 0739 1949 0824 2042 0908	2135 0950 2229 1030 2324 1109 1149 0019 1229	0117 1312 0217 1359 0319 1450 0424 1546 0528 1647
Application Maservatory 0. C. 20392-	Nov. Rise Set F h m h m 0447 1645 0551 1735 0658 1829 0909 2028	1010 2130 1 1106 2232 1 1156 2331 1 1241 1 1322 0028 1	1437 0214 11514 0305 11550 0355 11628 0445 1	1708 0536 1 1750 0626 1 1854 0716 1 1921 0806 1 2010 0854 2	2153 1025 2 2246 1108 2 2339 1149 1229 0	0034 1309 0130 1350 0229 1433 00330 1519 00433 1610 0
Astronomical Applications Dept U.S. Naval Observatory Washington, D.C. 20392-5420	0ct. Rise Set R M h m h m 0304 1602 0404 1642 0504 1726 0506 1811 0710 1859	0814 1950 1 0920 2045 1 1024 2143 1 1125 2242 1 1221 2342 1	1313 1400 0041 1442 0138 1522 0233 1600 0326	1636 0418 1 1713 0508 1 1750 0559 1 1828 0649 1	1952 0830 2 2037 0920 2 2124 1009 2 2214 1057 2 2306 1143	2359 1228 0 1310 0 0053 1352 0 0149 1433 0 0246 1515 0
	Sept. Rise Set F h m h m 0232 1577 0327 1643 0 0425 1726 0 0523 1809 0	0723 1936 0 0824 2021 0 0927 2109 1 1030 2200 1	1234 2350 1 1332 1332 1426 0049 1 1515 0148 1 1601 0246 1	1643 0342 1722 0437 1800 0530 1836 0622 1913 0714	1951 0804 1 2030 0855 2 2111 0946 2 2155 1036 2 2241 1126 2	2330 1215 2 1302 0021 1349 0 0114 1433 0 0210 1517 0
766	Aug. Rise Set I 0120 1452 0207 1543 0257 1632 0349 1720	0541 1851 (0639 1934 (0737 2015 (0835 2057)	1035 2225 1136 2312 1237 1339 0003 1439 0057	1536 0154 1629 0254 1718 0353 1803 0452 1845 0549	1924 0645 2001 0738 2038 0830 2115 0921 2153 1012	2233 1102 3 2315 1153 1243 (0000 1333 (0048 1423 (
Barking Sands, Kauai, Hawaii Rise and Set for the Moon for 1994 Hawaii Standard Time	July Rise Set I 0043 1348 0120 1428 0159 1519 0324 1610	0414 1751 (0504 1840 (0559 1927 (0555 2012 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0751 2055 (0848 2136 0945 2217 1042 2258 1140 2340 11240	1341 0025 1444 0113 1546 0206 1647 0303 1744 0403	1837 0504 1925 0605 2009 0704 2050 0801 2128 0856	2204 0948 2241 1040 2318 1130 2356 1220 (2319 120) 2311 1311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (2319 120) 2311 (
Barking Sands, Kauai, Hawaii e and Set for the Moon for 1 Hawaii Standard Time	June Rise Set 6 h m h m 0057 m h m 0132 1405 0 0208 1455 0 0321 1635 0	0402 1726 0 0445 1817 0 0531 1907 0 0620 1957 0 0712 2044 0	0006 2130 0 0901 2213 0 0957 2255 1 1053 2335 1	1247 0016 1346 0057 1448 0141 1551 0228 1656 0319	1800 0416 1 1901 0516 1 1957 0618 2 2048 0720 2 2134 0821 2	2216 0919 2 2254 1014 2 2331 1107 2 1158 2
Barking Rise and S Hav	May Rise Set 6 h m h m m n m m n m m n m m n m m n m m n m m n m m n m m n m m n m m n m m n m m n m m n m m n m m n m m n m m n m m n m m n m n	0332 1610 0 0407 1659 0 0444 1749 0 0522 1840 0	0647 2021 0 0734 2111 0 0624 2159 0 0916 2246 1	1105 1201 0013 1258 0054 1356 0135 1456 0217	1558 0301 1 1703 0348 1 1809 0438 1 1916 0534 2 2019 0633 2	2211 0838 2 2259 0939 2 2341 1037 1132 0
	Apr. Rise Set R h m h m h m h m 1107 0049 1206 0139 1303 0 0325 1359 0306 1452	0344 1544 0 0421 1634 0 0456 1724 0 0531 1813 0	0644 1953 0 0723 2043 0 0805 2134 0 0849 2224 0 0937 2314 1	1028 1121 0002 1216 0048 1312 0133 1410 0216	1509 0258 1 1611 0341 1 1714 0425 1 1819 0512 1	2033 0655 2 2137 0753 2 2238 0853 2 2332 0954 2
.	Nar. Rise Set R 2300 0937 2300 0937 0003 1121 0	0254 1411 0 0342 1508 0 0426 1602 0 0506 1656 0 0544 1747 0	0620 1838 0 0655 1928 0 0730 2017 0 0806 2107 0	0924 2248 1 1007 2339 1 1053 1 1142 0029 1 1234 0119 1	1329 0207 1 1427 0254 1 1526 0340 1 1627 0424 1 1729 0508 1	1832 0552 2 1937 0638 2 2043 0726 2 2149 0817 2 2253 0912
47 , N22 02	Feb. Rise Set R h = h = h = 154. 2007 1141 0109 1231 0 02210 1325 0	0405 1518 0 0457 1616 0 0544 1713 0 0627 1808 0 0707 1902 0	0745 1953 0 0620 2044 0 0655 2134 0 0931 2224 0	1045 1126 0004 1211 0055 1259 0147 1351 0238	1446 0329 1 1544 0418 1 1644 0505 1 1745 0551 1 1847 0636	1950 0720 1 2053 0804 1 2157 0849 2
Location: V159 47	Jan. Rise Set 2213 1005 2312 1046 1128 0011 1210 0112 1254	0213 1342 0315 1434 0417 1529 0516 1628 0612 1727	0703 1826 0 0750 1924 0 0832 2019 0 0911 2112 0	1022 2252 1 1057 2342 1 1132 1132 1 1209 0032 1 1249 0122 1	1332 0213 1 1419 0306 1 1510 0358 1 1605 0450 1 1702 0541 1	1802 0630 1 1903 0717 2 2003 0801 2 2104 0844 2205 0927
20	88883 É	28838	12 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	8744	ដ្ឋមាន	22822

TABLE 29. Port Allen Tides, January 1994

TABLE 30. Port Allen Tides, February 1994

						£	.34	2 5	6	-0.05	0.09	0.09	0.05	0.1	0.22	C. 35	1.19	24	1.32	1.57		0.02	60.0	0.09	0.05	0 03	0.15					
						ار ع ع	2036	2154	7167			2012					1924	2036	2254	2354		1812	1906	2042	2130	2218	2312					
		_	est	feet	51).		.07	-0.05	-0.93	57	2 9	0.78	8 8		1.07	7 5	0.	2 :	<u>. 9</u>	<u> </u>	60		e g	5	8 2	31	- :	Đ				
		Bay, #	5.0° u	s in feet) OHE	Ĭ.						1430 0												, –	-	612 1	54	•				
	1994	Allen, Hanapepe Bay,	54.0' North, 159º 35.0' West	highs, and fows	ard Ti	Ë																		_	_	_		-				
-	February 1994	n, Han	lorth,	ighs,	Stand	Ŧ		0.93				0.0												0.0	-0.06	-0.11	-0.13	- - -				
,	Ĩ		54.0' H		-Hosa:	T: se	0636	0724	1018	0754	00.00	0942	1006	1054	9 :: :	1212	0554	0618	0806	1006	1136	9080	0835	0924	0954	1024	1054	130				
		Port	210	Tidal range,	Aiaska-Hawaii Standard Time (AHST)	Ŧ	0.50	0.62	9.0	æ :	6 6	1.97	- 63 - 63	1.72	.58	1.43	0.48	0.60	99	0.48	0 36	- 69	5 8	1 95	1.80	1 69	1.53	33				
				-		Tine	0118	0254	0654	2100	0100	0530	0254	0406	0430	0524	0024	0136	0324 0542	0654	0736	0042	01.15	0236	0306	0342	0418	0454				
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						Time #	2348	2112	2230	7338	1748	1842	2012		1806	1924	1954	2112	2142	2218	2254	1748	1836	1918	1954	2042	2212	2254	2354			
		Ī	Hest	n feet.	янѕт)		2348	2112	2230	7338	1748		2012		1806	1924	1954	2112	2142	2218	2254	1748	1836	1918	1954	2042	2212	2254	2354	1 24		
3		gañ,	o 35.0° Hest	loss in feet.	Time (RHST)	- - -	0.87 2348	. 03 2112	-0.06 2230	-0.11	0.62 1748	1842	0.62 2012	-0.04	0.75 1806	0 68 1924	0.68 1954	0.72 2112	0.74 2142	0 77 2218	0.80 2254	0.60 1748	0.61 1836	0.65 1918	0.71 1954	0.79 2042	0.97 2212	1.06 2254	1.15 2354			
1004 1004		gañ,	1590 35	ond to	F	Time Ht Time	1836 0.87 2348	1424 03 2112	1512 -0.06 2230	1554 -0.11	1142 0.62 1748	1254 0.58 1842	1436 0.62 2012	1718 -0.04	1248 0.75 1806	1336 0 68 1924	1418 0.68 1954	1536 0.72 2112	1612 0.74 2142	1654 0 77 2218	1736 0.80 2254	1148 0.60 1748	1248 0.61 1836	1336 0.65 1918	1418 0.71 1954	1454 0.79 2042	1610 0.87 2212	1718 1.06 2254	1616 1.15 2354	1924		
- 1994		gañ,	North, 159º 35.	, highs, and to	F	Ht Time Ht Time	0.03 1836 0.87 2348	1,41 1424 - 03 2112	1,16 1512 -0.06 2230	0.92 1554 -0.08 2338	0.41 1142 0.62 1748	0.26 1254 0.58 1842	0.10 1436 0.62 2012	0.96 1718 -0.04	0.46 1148 0.75 1806 0.37 1248 0.70 1848	0.28 1336 0 68 1924	0.23 1418 0.68 1954	0.17 1536 0.72 2112	0.15 1612 0.74 2142	0.14 1654 0 77 2218	0.13 1736 0.80 2254	0.43 1148 0.60 1748	0.32 1248 0.61 1836	0.22 1336 0.65 1918	0.15 1418 0.71 1954	0.08 1454 0.79 2042	-0.03 1532 0.01 2124	-0.05 1718 1.06 2254	-0.08 1618 1.15 2354	-0 08 1924		,
*************************************		Port Allen, Hanapepe Bay, Hl	54.0' North, 159º 35.	range, highs, and lo	F	Time Ht Time	1306 0.03 1836 0.87 2348	0654 1.41 1424 - 03 2112	0748 1,16 1512 -0.06 2230	0654 0.92 1554 -0.06 2335 1018 0.73 1654 -0.11	0806 0.41 1142 0.62 1748	0054 0.26 1254 0.58 1842	1018 0.10 1436 0.62 2012	1036 0.86 1718 -0.04	0748 0.46 1148 0.75 1806 0842 0.37 1248 0.70 1848	0924 0.28 1336 0.68 1924	1030 0 10 1418 0 168 1954	1054 0.17 1536 0.72 2112	1124 0,15 1612 0,74 2142	1154 0.14 1654 0.77 2218	1224 0.13 1736 0.80 2254	0818 0 43 1148 0 60 1748	0848 0 32 1 248 0 61 1836	0918 0.22 1336 0.65 1918	0948 0.15 1418 0.71 1954	1012 0.08 1454 0.79 2042	1112 -0.03 1342 0.047 2124	1142 -0.05 1718 1.06 2254	1218 -0.08 1618 1.15 2354	1254 -0 08 1924		1
January 1994		Allen, Hanapepe Bay,	.0' North, 159º 35.	, highs, and to	Alaska-Hawaii Standard Time (AHST)	Ht Time Ht Time Ht Time	1.62 1306 0.03 1836 0.87 2348	0.53 0654 1.91 1929 - 0.39	0.69 0748 1.16 1512 -0.06 2230	0.58 1018 0.73 1654 -0.11	1.84 0806 0.41 1142 0.62 1748	2.02 0854 0.26 1254 0.58 1842 3 13 0036 0.16 1348 0.50 1030	2.19 1018 0.10 1436 0.62 2012	0.59 1036 0.86 1718 -0.04	1.63 0746 0.46 1148 0.75 1806 1.72 0842 0.37 1248 0.70 1848	1.87 0924 0.28 1336 0.68 1924	1.93 0954 0.23 1418 0.68 1954	1.93 1054 0.17 1536 0.72 2112	1.89 1124 0.15 1612 0.74 2142	1 82 1154 0.14 1654 0 77 2218	1,73 1224 0,13 1736 0,80 2254	1 63 0818 0 43 1148 0 60 1748	1,79 0848 0.32 1248 0.61 1836	1,90 0918 0.22 1336 0.65 1918	1,99 0948 0.15 1418 0.71 1954	2.03 1012 0.08 1454 0.79 2042	1 04 1112 -0 02 1630 0.01 212	1 81 1142 -0.05 1718 1.06 2254	1 63 1218 -0.08 1618 1.15 2354	1 41 1254 -0 08 1924		1
1994		Allen, Hanapepe Bay,	54.0' North, 159º 35.	range, highs, and lo	F	Time Ht Time Ht Time Ht Time	1.62 1306 0.03 1836 0.87 2348	53 0654 1,41 1424 - 0.3 2112	0.69 0748 1.16 1512 -0.06 2230	71 0654 0.92 1554 -0.06 2336 58 1018 0.23 1654 -0.11	1.84 0806 0.41 1142 0.62 1748	2.02 0854 0.26 1254 0.58 1842 3 13 0036 0.16 1348 0.50 1030	2.19 1018 0.10 1436 0.62 2012	0.59 1036 0.86 1718 -0.04	0748 0.46 1148 0.75 1806 0842 0.37 1248 0.70 1848	1.87 0924 0.28 1336 0.68 1924	1.93 0954 0.23 1418 0.68 1954	1.93 1054 0.17 1536 0.72 2112	1124 0,15 1612 0,74 2142	1 82 1154 0.14 1654 0 77 2218	1,73 1224 0,13 1736 0,80 2254	1 63 0818 0 43 1148 0 60 1748	0848 0 32 1 248 0 61 1836	1,90 0918 0.22 1336 0.65 1918	0948 0.15 1418 0.71 1954	2.03 1012 0.08 1454 0.79 2042	1 04 1112 -0 02 1630 0.01 212	1142 -0.05 1718 1.06 2254	1 63 1218 -0.08 1618 1.15 2354	1 41 1254 -0 08 1924		,
*************************************		Allen, Hanapepe Bay,	54.0' North, 159º 35.	range, highs, and lo	F	Ht Time Ht Time Ht Time	1.62 1306 0.03 1836 0.87 2348	0054 0.53 0654 1.41 1424 - 0.3 2112	0242 0.69 0746 1.16 1512 -0.06 2230	0.58 1018 0.73 1654 -0.11	98 0036 1.84 0806 0.41 1142 0.62 1748	0124 2.02 0054 0.26 1254 0.58 1842	37 0248 2.19 1018 0.10 1436 0.62 2012	90 0630 0.59 1036 0.86 1718 -0.04	0042 1.63 0748 0.48 1148 0.75 1806 0124 1.27 0842 0.37 1248 0.70 1848	95 0154 1.87 0924 0.28 1336 0.68 1924	0236 1.93 0954 0.23 1418 0.68 1954	0312 131 1030 0.13 1331 0.10 2030	0412 1.89 1124 0.15 1612 0.74 2142	0442 1 82 1154 0.14 1654 0 77 2218	60 0506 1,73 1224 0,13 1736 0,80 2254	0/30 0/30 1024 0/33 1034 0/00 1/48	0118 1.79 0848 0.32 1248 0.61 1836	0154 1.90 0918 0.22 1336 0.65 1918	13 0230 1.99 0948 0.15 1418 0.71 1954	17 0254 2.03 1012 0.08 1454 0.79 2042	0330 2 02 1042 0.03 1342 0.01 2124 0413 1 04 1112 -0 02 1630 0 92 2212	1 81 1142 -0.05 1718 1.06 2254	0518 1 63 1218 -0.08 1618 1.15 2354	0554 1 41 1254 -0 08 1924		!
1994		Allen, Hanapepe Bay,	54.0' North, 159º 35.	range, highs, and lo	F	Time Ht Time Ht Time Ht Time	1 82 0542 1.82 1306 0.03 1836 0.87 2348	1 44 0054 0.53 0654 1.41 1424 -0.39	1 44 0242 0.69 0746 1.16 1512 -0.06 2230	1 70 0454 0.71 0654 0.92 1554 -0.06 2336 n 84 0654 0.58 1018 0.73 1654 -0.11	1 98 0036 1.84 0806 0.41 1142 0.62 1748	19 0124 2.02 0054 0.26 1254 0.58 1842	2 37 0246 2.19 1016 0.10 1436 0.62 2012	0.90 0630 0.59 1036 0.06 1718 -0.04	1 69 0042 1 63 0746 0.46 1148 0.75 1806 1 84 01.75 1806	1.95 0154 1.87 0924 0.28 1336 0.68 1924	2 00 0236 1.93 0954 0.23 1418 0.68 1954	1.94 0312 1.93 1050 0.17 1536 0.72 2112	1.84 0412 1.89 1124 0.15 1612 0.74 2142	1 68 0442 1 82 1154 0.14 1654 0 77 2218	1 60 0506 1.73 1224 0.13 1736 0.80 2254	1.62 0036 1.63 0818 0.43 1148 0.60 1748	1 83 0118 1.79 0848 0.32 1248 0.61 1836	2 01 0154 1.90 0918 0.22 1336 0.65 1918	2.13 0230 1.99 0948 0.15 1418 0.71 1954	2 17 0254 2.03 1012 0.08 1454 0.79 2042	2.11 0330 2.02 1042 0.03 1342 0.81 2124 1.04 0412 1.04 1312 -0.02 1630 0.02 2212	1.87 0442 1.81 1142 -0.05 1718 1.06 2254	1 71 0518 1 63 1218 -0.08 1818 1.15 2354	1 49 0554 1 41 1254 -0 08 1924		

TABLE 31. Port Allen Tides, March 1994

TABLE 32. Port Allen Tides, April 1994

				Ŧ	1.64	1.59	 5 S	•	0.2	0.21	0.23	0.25	0.28	3 :		.50	 - 4	3	. ;	2 2	0.08	0.07	0.08	5	1.82	99.
				<u>:</u>	2042	2154	2354		2012	2054	2218	2254	2348	1806	1948	2048	2154	2342	. !	1954	2148	2242	2342	1812	1906	1954
Ē	Hest	n feet.	HHST).	ヹ	0.09	0.20	0.28	0.26	1.07	.35	.53	1.58	. 6.	0.07	0.15	0.27	34	0.32	0.26		. 85	1.97	2.05	-0.11	0.05	97.0
oe Bay,	0 35.0'	. 680	Time (<u></u>	1306	1418	1712	1824	1330	1436	1542	1612	1724	1054	1212	1312	1436	1736	1648	1330	1454	1548	1630	1054	1142	1236
April 1994 n, Manapep	th, 159	phs, and	standard	ž	0.57	0.54	0.0 .75	0.91	0.06	0.0	-0.02	-0.01	0.03	0.60	0.54	0.52	0.59	96.0	1.20	21.0-	-0.24	-0.27	-0.25	0.63	0.55	0 53
April 1994 Port Alien, Hanapepe Bay,	21º 54.0' North, 159º 35.0' West	nge, hig	Alaska-Hawaii Standard Time (AHST)	÷	0730					0824			1024						1248			0854				
Par	210 5	Tidal range, highs, and lows in feet	Alaska-	ĭ	0.30	0.27	0.15	0.10	36	1.27	- 0	76.0	0.87	0.31	0.33 0.33	0.30	0.23	0.06	-0.03	1.32	=======================================	0.98	0.85	0.13	0.13	+
		_		<u>.</u>	0318	0442	0548	9020	0042	0154	0254	0330	0430	9600	0242	0348	0448	0606	0642	0036	0206	0254	0336	0042	0148	0254
				Range	1.55	1.39	. 35	0.81	33	1.35	1.55	09 1	59	1.53	 	1.23	1.24	33	1.23	0 6	2 69	2.24	2 28 1 1	2.05	10	1 54
				Date	-	?	n +	ı,	• ~	6 0 C	. 5	= 9	2 5	<u>*</u> :	<u>. 6</u>	1.	6 6	50 - 20	51	22	7.	52	9;	. 8 2	56	30
			-		_	_		_		=		_	_	_		_	=	_	_	_	_					<u> </u>
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94 epe Bay, HI	90 35.0' West	d logs in feet.	d line (RMST).	: <u>.</u>	-0.11 1854 1	-0.05 2006 1	0.08 2242	0.11 2342 1	0.10	1924	1.10 2054	1.20 2130	1.38 2212	1.37 2336	0.09 1836 1	0.13 1936 1	0.18 2042 1	0.24 2254 1	0.22 2348 1	0.16	1.16 1948 0	1.36 2042 0	1.53 2136 0	2330 0	1.78	1030
	1590 35.	and loss	<u>=</u>	H Time	1206 -0.11 1854 1	1248 -0.05 2006 1	1454 0.01 2124 1	1612 0.11 2342 1	0.10	1342 0.87 1924	1454 1.10 2054	1530 1.20 2130	1636 1.28 2212	1712 1.37 2336	1754 1.39	1212 0.13 1936 1	1254 0.18 2042 1	1524 0.24 2254 1	1642 0.22 2348 1	1754 0.16	1348 1.16 1948 0	1430 1.36 2042 0	1512 1.53 2136 0	1554 1.67 2230 0	1736 1.78	-0.11 1030 -0.02 1936
March 1994 Allen, Hanapepe	0' Horth, 1590 35.	, highs, and loss	Standard lime	Time Ht Time	1.12 1206 -0.11 1854 1	0.90 1248 -0.05 2006 1	1454 0.01 2124 1	0.55 1612 0.11 2342 1	1730 0.10	0.10 1342 0.87 1924	0.05 1454 1.10 2054	0.03 1530 1.20 2130	1636 1.28 2212	0.04 1712 1.37 2336	0.06 1754 1.39 0.68 1142 0.09 1836 1	0 76 1212 0.13 1936 1	0.64 1254 0.18 2042 1	0.55 1524 0.24 2254 1	0.64 1642 0.22 2348 1	0.78 1754 0.16	-0.01 1348 1.16 1948 0	-0.09 1430 1.36 2042 0	-0.15 1512 1.53 2136 0	-0.20 1554 1.87 2230 0 -0.20 1648 1.76 2330 0	-0.18 1736 1.78	1212 -0.11 1030
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March 1994 Allen, Hanapepe	54.0' Horth, 1590 35.	, highs, and loss	Standard lime	Time Ht Time Ht Time	0.29 0536 1.12 1206 -0.11 1854 1	0.42 0618 0.90 1248 -0.05 2006 1	0718 0.71 1342 0.01 2124 1 0846 0.58 1454 0.08 2242 1	0.33 1036 0.55 1612 0.11 2342 1	0.23 1154 0.62 1730 0.10	0830 0.10 1342 0.87 1924	1.62 0918 0.05 1454 1.10 2054	1.52 0942 0.03 1530 1.20 2130	1.40 0954 0.03 1554 1.28 2212 1.26 1024 0.03 1636 1.34 2254	1.15 1048 0.04 1712 1.37 2336	0.41 0524 0.08 1142 0.09 1836 1	0.48 0554 0 76 1212 0.13 1936 1	0.51 0642 0.64 1254 0.18 2042 1	0.37 0954 0.55 1524 0.24 2254 1	0.28 1124 0.64 1642 0.22 2348 1	0.18 1218 0.78 1754 0.16	1,61 0806 -0.01 1348 1.16 1948 0	1.56 0836 -0.09 1430 1.36 2042 0	1.47 0906 -0.15 1512 1.53 2136 0	1.18 1012 -0.20 1648 1.76 2330 0	1.00 1048 -0.18 1736 1.78	0524 0.83 1124 -0.11 1030 0618 0.68 1212 -0.02 1936
March 1994 Allen, Hanapepe	54.0' Horth, 1590 35.	, highs, and loss	Standard lime	Ht Time Ht Time Ht Time	0018 0.29 0536 1.12 1206 -0.11 1854 1	0136 0.42 0618 0.90 1248 -0.05 2006 1	0318 0.48 0718 0.71 1342 0.01 2124 1 0512 0.43 0848 0.58 1454 0.08 2242 1	.57 0630 0.33 1036 0.55 1612 0.11 2342 1	0.23 1154 0.62 1730 0.10	0124 1 73 0830 0.10 1342 0.87 1924	0236 1.62 0918 0.05 1454 1.10 2054	0306 1.52 0942 0.03 1530 1.20 2130	0330 1.40 0954 0.03 1554 1.28 2212 0354 1.26 1024 0.03 1636 1.34 2254	0424 1.15 1048 0.04 (712 1.37 2336	0454 1.01 1112 0.06 1754 1.39 0.09 1836 1	0136 0.48 0554 0 76 1212 0.13 1936 1	.22 0306 0.51 0642 0.64 1254 0.18 2042 1	0554 0.37 0954 0.55 1524 0.24 2254 1	36 0636 0.28 1124 0.64 1642 0.22 2348 1	0706 0.18 1218 0.78 1754 0.16 0034 1.41 0234 0.08 1304 0.06 1854 0	.62 01:8 1.61 0806 -0.01 1348 1.16 1948 0	0154 1.56 0836 -0.09 1430 1.36 2042 0	0236 1.47 0906 -0.15 1512 1.53 2136 0	0354 1.18 1012 -0.20 1648 1.76 2330 0	0436 1.00 1048 -0.18 1736 1.78	0.21 0524 0.83 1124 -0.11 1030 0.28 0618 0.68 1212 -0.02 1936

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TABLE 34. Port Allen Tides, June 1994		
TABLE 33. Port Allen Tides, May 1994	Time Ht Time (1994 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as 2007 as	

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nge, highs, and lows in feet

t Allen, Hanapepe Bay, 4.0' North, 159º 35.0'

August 1994

Hawaii Standard Time (AHST).

	Port	210 54	Tidal ran	Alaska-H	¥	0.20	9 7	92.0	0.05		3 = :	1.23	0.09	60.0		. *	0.13	0.80	66.0	60.1	2 4	1.33	1.38	- ;	0.28	36.0	0.38	0.38	0 34
						0436	0530	9110	020	0242	0406	0454	0024	0024	0148	0354	0200	0033	0212	0254	0330	0448	0530	0618	0018	0.43	0242	0354	0454
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						2130	2242	9163	2136	2206	2306	2336	1724	1754	1024	2018	2136	FC77	2106	2148	2254	2330	2354	1254	1824	1854	1936	2036	9077
	Ŧ	Hest	feet.	RHST)	ž	9.74	900	0.42	16.1	- 6	2.06	2.03	0 - 0	0.33	2.5	0.74	0.67	0.36	2.13	2.21	2.17	5.06	5.		09 0	9.74	0.82	92.0	0.0
	e Bay,	35.0	1089	Time (. i	1754	1924	2054	90+	212	1548	1618	1036	30	1235	1554	1754	2024	1342	1424	1542	1618	1648	136	1230	1348	1530	1742	7.6
July 1994	Port Allen, Hanapepe Bay,	North, 159º 35	Tidal range, highs, and lows in feet	Alaska-Hasaii Standard Time (RHST)	ž	1.33	 S	. 7 . 7	-0.01	0.03	60.0	, 0.0 0.0	0.05	94	S =	1.38	. 59	66	-0.10	- o -	-0.07	10 0	0 12	. ·	1.12	1.20	- 30	1.42	6 C.
7	t Allen		id , bgr	i i oeoi	•	1124	1212	1330	0642	0724	0836	0912	0512	0612	7170	0048	1054	1254	0612	0706	0812	0924	9001	9606	9020	9090	8160	1030	<u> </u>
	Par	210 54.0"	Tidal ra	Alaska-1	ž	0.08	90.0	0.07	0.66	0.0 9.0 9.0	0.69	2.7		0.00	5 6	00.0	-0.02	0.0	69.0	0.70	00.0	90 0	0.93	6.0	2 -	61.0	0.20	0.21	0.21
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					Range	1.25	‡ ;	282	1 92	2.02	2.10	5 04	 5 5	09		38	19.1	5 62 2 06	2 23	2 32	2.24	2 05	52 .		6	10	60 -	1 21	35
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TABLE 37. Port Allen Tides, September 1994

TABLE 38. Port Allen Tides, October 1994

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	Ī	Uest	in feet.	HST).	ž	;	 •		9 4.	1.33	8	- 05 0 8	0.72	0.44	0.38	0.26	1.64	.54		1.21	=	1.0	0 92	.	7 2	02.0	0 42	0 34	92 0	0 17	‡ _	35
+ 61	pe Bay,	35.0°		Time (F	 		1330	1412	146	1530	1612	1248	1854	1606	1712	1836	1212	1254	100	1436	1512	1542	1612	1648	000	1954	1624	1,06	1742	1812	1206	1254
October 1994	Allen, Manapepe Bay	.O' North, 159º	highs, and lows	Standard	ž	,	0.39	200	0.28	0.30	0.34	0 0	0.42	1.92	1.85	1.72	0.52	0.49	0 6		+	0 46	9	0.50	20.00	0.48	69.1	1.63	1.58	1.52	0.53	*
00	t Allen	54.0' No	nge, hie	Alaska-Hawaii Standard Time (AHST)	 • • • • • • • • • • • • • • • • • •	36.30	0636	0824	0918	1012	9011	1324	1442	9080	1024	1124	0554	9020	0.00	0630	1012	1054	1136	1230	1251	1530	0824	0924	1018	118	0630	0730
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itember 1994	Bay.	1590 35 0.	and loss	andard Time (Ht Time	00 - 750	28 1254 1.90 2012 0	18 1412 1 94 2054 0	17 1448 1.89 2130 0	.19 1518 1.79 2154 0	25 1554 1.65 2224 0	.35 1630 1.48 2254 0 46 1212 1.20 2336 0	.57 1754 1.10	.80 1442 0.64 1854 0.	0 61 2018 0.	89 1842 0.42 2330 0.	92 1924 0.34	32 1254 1.92 1954 0.	20 1336 1.87 2024 0.	31 1442 1.68 2118 0.	.35 1512 1.55 2142 0.	.40 1542 1.42 2154 0.	47 1606 1 29 2224 0	54 1636 1 16 2248 0	67 1248 0 02 2354 0	69 1836 0.82	64 1624 0 64 2006 0	.65 1730 0.57 2154 0.	.69 1812 0 48 2312 0.	1842 0 40	.45 1212 1 75 1912 0.	
September 1994	Allen, Hanapepe Bay,	.O' North, 159º 35 O'	, highs, and loes i	Standard Time (Time Ht Time		0.26 1254 1.90 2012 0	0.52 1.53 1.54 2050 0	0.17 1448 1.89 2130 0	0.19 1518 1.79 2154 0	0.25 1554 1.65 2224 0	0.35 1630 1.46 2254 0	0.57 1754 1.10	1,80 1442 0.64 1854 0.	81 1624 0 61 2018 0.	1.89 1842 0.42 2330 0.	1 92 1924 0.34	0.32 1254 1.92 1954 0.	0.30 1.336 1.87 2024 0.0	0.31 1442 1.68 2118 0.	0.35 1512 1.55 2142 0.	0.40 1542 1.42 2154 0.	0.47 1606 1 29 2224 0	0.54 1636 1.16 2248 0.	0.61 1706 1.04 2316 U.	0.69 1836 0.82	1.64 1624 0.64 2006 0	1.65 1730 0.57 2154 0.	1.69 1812 0 48 2312 0.	1.73 1842 0.40	0.45 1212 1.75 1912 0.	
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September 1994	Allen, Hanapepe Bay,	54.0' North, 159º 35 0'	range, highs, and loes	Standard Time (Time Ht Time	0 1001 00 - 1001 0 1000 0 0 0 0 0 0 0 0	88 0554 0.28 1254 1.90 2012 0	0.05 FET 0.05 3.0 0.00 (0.00 1.00 1.00 1.00 1.00 1.00 1	1,27 0824 0,17 1448 1,89 2130 0	1.41 0912 0.19 1518 1.79 2154 0	1.55 0954 0.25 1554 1.65 2224 0	1.66 1054 0.35 1630 1.48 2254 0	1.78 1306 0.57 1754 1.10	0.16 0730 1.80 1442 0.64 1854 0.	.22 0842 1.81 1624 0.61 2018 0. 30 0854 1.85 1248 0.52 2206 0	0.34 1106 1.89 1842 0.42 2330 0.	0.35 1206 1.92 1924 0.34	0.98 0606 0.32 1254 1.92 1954 0.	1 22 023 0 1330 1.67 2021 0.	1 39 0836 0.31 1442 1.68 2118 0.	1.50 0924 0.35 1512 1.55 2142 0.	1.58 1006 0.40 1542 1.42 2154 0.	1.64 1048 0.47 1606 1 29 2224 0	167 1130 0 54 1636 1 16 2248 0	1 64 1224 U.D. 1100 1.UT 2310 U.	1.64 1454 0.69 1836 0.82	0.43 0818 1.64 1624 0.64 2006 0.	0.49 0930 1.65 1730 0.57 2154 0.	49 1030 1.69 1812 0 48 2312 0.	0.51 1124 1.73 1842 0.40	1.02 0536 0.45 1212 1.75 1912 0.	
September 1994	Allen, Hanapepe Bay,	54.0' North, 159º 35 0'	range, highs, and loes	Standard Time (Ht Time Ht Time Ht Time	0 1:01 00 - FM1: 41 0 FMM2 48 0 4100	0018 0 88 0554 0.28 1254 1.90 2012 0	0.000 0.39 0.000 0.26 1330 1.34 2030 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	J224 1.27 0824 0.17 1448 1.89 2130 0	0306 1.41 0912 0.19 1518 1.79 2154 0	0348 1.55 0954 0.25 1554 1.65 2224 0	0436 1.66 1054 0.35 1630 1.46 2254 0 0454 1.24 1154 0.46 1712 1.20 2336 0	0624 1.78 1306 0.57 1754 1.10	0018 0.16 0730 1.80 1442 0.64 1854 0.	0.22 0842 1.81 1624 0.61 2018 0.	0336 0 34 1106 1.89 1842 0.42 2330 0.	0454 0 35 1206 1 92 1924 0 34	0030 0.98 0606 0.32 1254 1.92 1954 0.	0116 13 0634 0 30 1336 1.61 2024 0.	0236 1 39 0836 0.31 1442 1.68 2118 0.	34 0312 1.50 0924 0.35 1512 1.55 2142 0.	0348 1.58 1006 0.40 1542 1.42 2154 0.	39 0418 1.64 1048 0.47 1606 1 29 2224 0	39 0454 1.67 1130 0.54 1636 1.16 2248 0.	36 U350 T0.1 GV1 I3.0 T2.1 O.1 GCCU O.	0718 1.64 1454 0.69 1836 0.82	21 0036 0.43 0818 1.64 1624 0.64 2006 0	16 0136 0.49 0930 1.65 1730 0.57 2154 0.	21 0254 0 49 1030 1.69 1812 0 48 2312 0.	0424 0.51 1124 1.73 1842 0.40	0006 1.02 0536 0.45 1212 1.75 1912 0.	

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TABLE 40. Port Allen Tides, December 1994

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							T : 36	1954	2042	2124	2254	2348		2130	2248	0167	1754	1830	9061	2006	2042	2112	2148	2306	2354		2142	2348		1806	1854	1942	2030		
		∓	. Hest	in feet	(AHST)		ž	0.83	0.77	0.72	2.0	0.72	0.73	0.12	0.1	0.0	0.89	0.79	2.2	9.0	99.0	0.66	99.0	0.72	0.79	0.91	0.03	-0.06	-0.13	0.74	0.69	0.67	0.69		
•	1994	pepe Bay	590 35.0	nd loss	d Time		- - -	1406	1454	1548	1242	1848	2006	1518	1554	1718	1118	1212	1306	1430	1506	1542	1624	1754	1906	2018	1542	1630	1718	1154	1254	1354	1448		
000		Allen, Hanapepe Bay,	Narth, 1590	Tidal range, highs, and lows in feet	Alaska-Hawaii Standord Time (AHST)		ĩ			0.12												0.23	0.20	9	0.13	0.09	- - -	00	0.8	0.42	0.27	0.15	0.03		
	5	Port Alle	54.01	range, h	a-Hawaii		Ē	0936	1030	11.8	1254	1342	1430	0736	0824	9101	0718	0818	9060	1018	1048	1124	1154	1254	1336	1412	0724	0918	1036	0754	0854	0936	1018		
		۵.	210	Tidal	Alask		ž																2.01												
							 	0224	0312	0354	0430	0090	0654	0048	0212	0554	0030	0112	0148	0224	0324	0354	0424	0530	0090	0642	0112	0454	0642	0042	0130	0212	0254		
							Range	2.41	2.52	2.50	2.36	1.92	1 72	1 50	- 29	77.	* + · -	1.66	1.82	2 9	2.04	2.03	1.96	2 2	1.63	1.50	. 36	1.56	96.0	2.03	2.28	2.46	2.53		
							Dat e	-	~4	m •	- 1	פעים	~	60	o -	2 =	12	13	<u> </u>	2 9	~	9 2	6 6	21	22	23	24	3 %	27	28	53	3	3	_	
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			Ī	Uest	n feet.	AHST).	į	Ĭ	1.24	2 5	0.89	0.00	0.73	0. 0	0.23	0.20	91 6	- e	1.07	86.0	0.8	0.78	0 73	99.0	99.0	0.5	5 0	0	0.03	1.12	00.0	5			
		1994	Allen, Hanapepe Bay,	90 35.0.	Ildal range, highs, and lows in	Alaska-Hawaii Standard Time (AHST).	•	e -	1336	1424	1554	1648	1748	1854	1618	1 706	1742	1212	1254	1330	1442	1510	1554	1724	919	1936	1554	1612	1718		1218	717			
		November 1994	n, Kanap	54 O' North, 159º 35.	ighs, an	Standar	÷	Ĭ		0.29				0.27		1.60		0 0		9 4	0.39		0 36				25	4		0	0 4	>			
		£	Port Alle	S4 0. W	range, h	a-Hawaii	;	- -	0830	0924	1118	1218	1316	1424	0830	0660	1030	0706	0806	0854	1018	1054	1142	1306	1348	1436	08180	0912	1018	06 30	0742	2100			
			مَ	210	fidal 1	Alask		ĩ		2.05							0 -	- -				-	66 -	-	-		5 G	0	o			7			
							:	-	0154	0236	040	0454	0542	0636	0112	0248	0430	002	0130	020	0312	0342	04.5	0524	0554	0642	0130	0312	0454	0015	0054	7410			

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Date

APPENDIX A

APPENDIX A

HEIGHT OF THE TIDE AT ANY TIME

The height of the tide at times intermediate to the times of high and low water is needed on occasion, and may be computed by numerical methods. An example of the method, (adapted from Table 3 of the data source), is presented here, using the predicted tides for a day at Point Mugu.

Problem: Given that the predicted times and heights of the tides are:

TIME	HEIGHT
0039	4.9
0814	0.2
1510	3.1
1933	2.4

What is the height of the tide at 0300?

Numerical Method

The duration of fall is 08h 14m - 00h 39m = 7h 35m

The time after high water is $03h\ 00m - 00h\ 39m = 2h\ 21m$

The range of tide is 4.9 - 0.2 = 4.7 feet

Entering Table A-1 at the duration of fall of 7h 40m, which is the nearest value to 6h 35m, the nearest value on the horizontal line to 2h 21m is 2h 18m after high water. Following down this column to its intersection with a range of 4.5 feet which is the nearest value to 4.7 feet, one obtains 0.9 which, being calculated from high water, must be subtracted from 4.9. The approximate height at 0300 is therefore 4.0 feet.

When the duration of rise or fall is greater than 10h 40m, enter the table with one-half the given duration and with one-half the time from nearest high or low water; but if the duration of rise or fall is less than 4h 00m, enter the table with double the given duration and time.

TABLE A-1. Height of the Tide at Any Time

		· · · · ·					Time fro	m the ne	arest high	water or	low water	*				
	h.m.	h.m.	h.m.	h.m.	h,m.	h.m.	h.m.	h.m.	h.m.	h,m.	h.m.	h.m.	h.m.	h.m.	h.m	h.m.
	4 00 4.20 4.40	0 08 0 09 0 09	0 16 0 17 0 19	0 24 0 26 0 28	032 035 037	0 40 0 43 0 47	0 48 0 52 0 56	0 56 1 01 1 05	1 04 1 09 1 15	1 12 1 18 1 24	1 20 1 27 1 33	1 28 1 35 1 43	1 36 1 44 1 52	1 44 1 53 2 01	1 52 2 01 2 11	2 00 2 10 2 20
otnote	5 00 5 20 5 40	0 10 0 11 0 11	0 20 0 21 0 23	0 30 0 32 0 34	0 40 0 43 0 45	0 50 0 53 0 57	1 00 1 04 1 08	1 10 1 15 1 19	1 20 1 25 1 31	1 30 1 36 1 42	1 40 1 47 1 53	1 50 1 57 2 05	2 00 2 08 2 16	2 10 2 19 2 27	2 20 2 29 2 39	2 30 2 40 2 50
ull, see fo	6 00 6 20 6 40	0 12 0 13 0 13	0 24 0 25 0 27	0 36 0 38 0 40	0 48 0 51 0 53	1 00 1 03 1 07	1 12 1 16 1 20	1 24 1 29 1 33	1 36 1 41 1 47	1 48 1 54 2 00	200 207 213	2 12 2 19 2 27	2 24 2 32 2 40	2 36 2 45 2 53	2 48 2 57 3 07	3 00 3 10 3 20
rise or fa	7 00 7 20 7 40	0 14 0 15 0 15	0 28 0 29 0 31	0 42 0 44 0 46	0 56 0 59 1 01	1 10 1 13 1 17	1 24 1 28 1 32	1 38 1 43 1 47	1 52 1 57 2 03	2 06 2 12 2 18	2 20 2 27 2 33	2 34 2 41 2 49	2 48 2 56 3 04	3 02 3 11 3 19	3 16 3 25 3 35	3 30 3 40 3 50
Duration of rise or fall, see footnote	8 00 8 20 8 40	0 16 0 17 0 17	0 32 0 33 0 35	0 48 0 50 0 52	1 04 1 07 1 09	1 20 1 23 1 27	1 36 1 40 1 44	1 52 1 57 2 01	2 08 2 13 2 19	2 24 2 30 2 36	2 40 2 47 2 53	2 56 3 03 3 11	3 12 3 20 3 28	3 28 3 37 3 45	3 44 3 53 4 03	4 00 4 10 4 20
٥	9 00 9 20 9 40	0 18 0 19 0 19	0 36 0 37 0 39	0 54 0 56 0 58	1 12 1 15 1 17	1 30 1 33 1 37	1 48 1 52 1 56	206 211 215	2 24 2 29 2 35	2 42 2 48 2 54	3 00 3 07 3 13	3 18 3 25 3 33	3 36 3 44 3 52	3 54 4 03 4 11	4 12 4 21 4 31	4 30 4 40 4 50
	10 00 10 20 10 40	0 20 0 21 0 21	0 40 0 41 0 43	1 00 1 02 1 04	1 20 1 23 1 25	1 40 1 43 1 47	2 00 2 04 2 08	2 20 2 25 2 29	2 40 2 45 2 51	3 00 3 06 3 12	3 20 3 27 3 33	3 40 3 47 3 55	4 00 4 08 4 16	4 20 4 29 4 37	4 40 4 49 4 59	5 00 5 10 5 20
									ection to							
	Ft. 0.5 1.0 1.5 2.0 2.5	Ft. 0.0 0.0 0.0 0.0 0.0	Ft. 0.0 0.0 0.0 0.0	Ft. 0.0 0.0 0.0 0.0	Ft. 0.0 0.0 0.1 0.1 0.1	Ft. 0.0 0.1 0.1 0.1 0.2	Ft. 0.0 0.1 0.1 0.2 0.2	Ft. 0.1 0.1 0.2 0.3 0.3	Ft. 0.1 0.2 0.2 0.3 0.4	Ft. 0.1 0.2 0.3 0.4 0.5	Ft. 0.1 0.2 0.4 0.5 0.6	Ft 0.1 0.3 0.4 0.6 0.7	Ft. 0.2 0.3 0.5 0.7	Ft 0.2 0.4 0.6 0.8 1.0	Ft 0.2 0.4 0.7 0.9 1.1	Ft 0.2 0.5 0.8 1.0 1.2
	3.0 3.5 4.0 4.5 5.0	0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.1	0.1 0.1 0.1 0.1 0.1	0.1 0.2 0.2 0.2 0.2	0.2 0.2 0.3 0.3	0.3 0.3 0.4 0.4 0.5	0.4 0.4 0.5 0.6 0.6	0.5 0.6 0.7 0.7	0.6 0.7 0.8 0.9	0.8 0.9 1.0 1.1	0.9 1.0 1.2 1.3	1.0 1.2 1.4 1.6 1.7	1.2 1.4 1.6 1.8 2.0	1.3 1.6 1.8 2.0 2.2	1.5 1.8 2.0 2.2 2.5
2	5.5 6.0 6.5 7.0 7.5	0.0 0.0 0.0 0.0	0.1 0.1 0.1 0.1 0.1	0.1 0.1 0.2 0.2 0.2	0.2 0.3 0.3 0.3 0.3	0.4 0.4 0.4 0.5 0.5	0.5 0.6 0.6 0.7 0.7	0.7 0.8 0.8 0.9	0.9 1.0 1.1 1.2 1.2	1.1 1.2 1.3 1.4 1.5	1.4 1.5 1.6 1.8 1.9	1.6 1.8 1.9 2.1 2.2	1.9 2.1 2.2 2.4 2.6	2.2 2.4 2.6 2.8 3.0	2.5 2.7 2.9 3.1 3.4	2.8 3.0 3.2 3.5 3.8
Range of tide, see foomote	8.0 8.5 9.0 9.5 10.0	0.0 0.0 0.0 0.0	0.1 0.1 0.1 0.1 0.1	0.2 0.2 0.2 0.2 0.2	0.3 0.4 0.4 0.4	0.5 0.6 0.6 0.6	0.8 0.8 0.9 0.9	1.0 1 1 1.2 1.2 1.3	1.3 1.4 1.5 1.6 1.7	1.6 1.8 1.9 2.0 2.1	2.0 2.1 2.2 2.4 2.5	2.4 2.5 2.7 2.8 3.0	2.8 2.9 3.1 3.3 3.5	3 2 3 4 3.6 3.8 4 0	3.6 3.8 4.0 4.3 4.5	4 0 4.2 4.5 4.8 5.0
Range of bi	10.5 11.0 11.5 12.0 12.5	0.0 0.0 0.0 0.0	0.1 0.1 0.1 0.1 0.1	0.3 0.3 0.3 0.3	0.5 0.5 0.5 0.5	0.7 0.7 0.8 0.8 0.8	1.0 1.1 1.1 1.1 1.2	1.3 1.4 1.5 1.5	1.7 1.8 1.9 2.0 2.1	2.2 2.3 2.4 2.5 2.6	2.6 2.8 2.9 3.0 3.1	3.1 3.3 3.4 3.6 3.7	3.6 3.8 4.0 4.1 4.3	4.2 4.4 4.6 4.8 5.0	4.7 4.9 5.1 5.4 5.6	5.2 5.5 5.8 6.0 6.2
	13.0 13.5 14.0 14,5 15.0	0.0 0.0 0.0 0.0	0.1 0.1 0.2 0.2 0.2	0.3 0.3 0.4 0.4	0.6 0.6 0.6 0.6 0.6	0.9 0.9 0.9 1.0 1.0	1.2 1.3 1.3 1.4 1.4	1.7 1.7 1.8 1.9	2.2 2.2 2.3 2.4 2.5	2.7 2.8 2.9 3.0 3.1	3.2 3.4 3.5 3.6 3.8	3.9 4.0 4.2 4.3 4.4	4.5 4.7 4.8 5.0 5.2	5 1 5 3 5 5 5 7 5 9	5.8 6.0 6.3 6.5 6.7	6.5 6.8 7.0 7.2 7.5
	15.5 16.0 16.5 17.0 17.5	0.0 0.0 0.0 0.0	0.2 0.2 0.2 0.2 0.2	0.4 0.4 0.4 0.4	0.7 0.7 0.7 0.7 0.8	1.0 1.1 1.1 1.1	1.5 1.5 1.6 1.6	2.0 2.1 2.1 2.2 2.2	2.6 2.6 2.7 2.8 2.9	3.2 3.3 3.4 3.5 3.6	3.9 4.0 4.1 4.2 4.4	4.6 4.7 4.9 5.0 5.2	5 4 5 5 5 7 5 9 6 0	6 1 6 3 6 5 6 7 6 9	6.9 7.2 7.4 7.6 7.8	7.8 8.0 8.2 8.5 8.8
	18.0 18.5 19.0 19.5 20.0	0.0 0.1 0.1 0.1	0.2 0.2 0.2 0.2 0.2	0.4 0.5 0.5 0.5 0.5	0.8 0.8 0.8 0.8	1.2 1.2 1.3 1.3	1.7 1.8 1.8 1.9 1.9	2.3 2.4 2.4 2.5 2.6	3.0 3.1 3.1 3.2 3.3	3.7 3.8 3.9 4.0 4.1	4.5 4.6 4.8 4.9 5.0	5.3 5.5 5.6 5.8 5.9	6.2 6.4 6.6 6.7 6.9	71 73 75 77 79	8 1 8 3 8 5 8 7 9 0	9.0 9.2 9.5 9.8 10.0

^{1.} Obtain from the predictions the high water and low water, one of which is before and the other after the time for which the height is required. The

it committee predictions the rings water and low water, one of which is before and the other after the time for which the height is required. The difference between the times of occurrence of flees tides is the duration of new or fall, and the difference between heights is the range of tide for the above table. Find the difference between the nearest high or low water and the time for which the height is required.

2. Enter the table with the duration of rise or fall, printed in heavy-faced type, which most nearly agrees with the actual value, and on that horizontal line find the time from the nearest high or low water which agrees most nearly with the corresponding actual difference. The correction sought is in the column directly below on the line with the range of tide.

3. When the nearest tide is both water with the correction.

^{3.} When the nearest tide is high water, subtract the correction

^{4.} When the nearest tide is low water, add the correction

NAWCWPNS TM 7667 GRAPHICAL METHOD

If the height of the tide is required for a number of times on a certain day the fill tide curve for the day, may be obtained by the one-quarter, one-tenth rule. The procedure is as follows:

- 1. On cross-section paper plot the high and low water points in the order of their occurrence for the day, measuring time horizontally and height vertically. These are the basic points for the curve.
- 2. Draw light straight lines connecting the points representing successive high and low waters.
- 3. Divide each of these straight lines into four equal parts. The halfway point of each line gives another point for the curve.
- 4. At the quarter point adjacent to high water, draw a vertical line above the point, and at the quarter point adjacent to low water, draw a vertical line below the point, making the length of these lines equal to one-tenth of the range between the high and low waters used. The points marking the ends of these vertical lines give two additional intermediate points for the curve.
- 5. Draw a smooth curve through the points of high and low waters and the intermediate points, making the curve well rounded near high and low waters. This curve will approximate the actual tide curve and heights for any time of the day may be readily scaled from it. The resulting graph is shown in Figure A-l.

CAUTION

Both methods presented are based on the assumption that the rise and fall conform to simple cosine curves. Therefore the heights obtained will be approximate. The roughness of approximation will vary as the tide curve differs from a cosine curve.

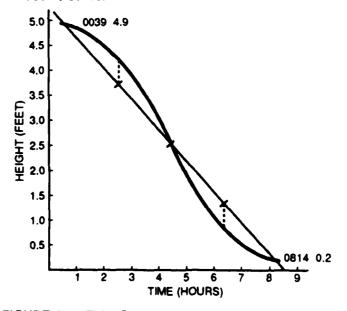


FIGURE A-1. Tidal Curve for Solution of the Problem.

APPENDIX B

APPENDIX B EQUINOXES, SOLSTICES, AND LUNAR PHASES 1994

The dates and times for Vernal and Autumnal Equinoxes and Summer and Winter Solstices during 1994 are listed in Table B-1. The 1994 dates and times for phases of the moon are given in Table B-2. Times are Pacific Standard Time, add 1 hour when Daylight Savings Time is in effect; add 2 hours for times in the Barking Sands area.

TABLE B-1. Equinoxes and Solstices, 1994, Point Mugu Area

Vernal Equinox	20 March	1228 PST	Beginning of Spring
Summer Solstice	21 June	0648 PST	Day and night equal length Beginning of Summer
Autumnal Equinox	22 September	2219 PST	Greatest duration daylight Beginning of Autumn
Winter Solstice	21 December	1823 PST	Day and night equal length Beginning of Winter
			Greatest duration darkness

TABLE B-2. Lunar Phases, 1994, Point Mugu Area

	JANU	ARY	FEBRI	JARY	MAF	SCH	APF	211
	DATE		DATE	TIME		TIME	DATE	
Last Quarter	4	1600	3	0006	4	0853	2	1855
New Moon	11	1510	10	0630	11	2305	10	1617
First Quarter	19	1227	18	0947	20	0404	18	1834
Full Moon	27	0523	25	1715	27	0309	25	1145
	MAY		JU	NE	JU	LY	AUC	GUST
(DATE	TIME	DATE	TIME	DATE	TIME	DATE	TIME
New Moon	10	0907	9	0026	8	1337	7	0045
First Quarter	18	0450	16	1156	15	1712	13	2257
Full Moon	24	1939	23	0333	22	1216	20	2247
Last Quarter	31	2002	30	1131	30	0440	28	2241
Last Quarter	2	0632						****
	CEDTE	MDED	OCTO	DED	NOVE	ADED	DECE	ADED
	SEPTE		OCTO		NOVE		DECE	
	DATE	IIME	DATE	TIME	DATE	TIME	DATE	IIME
New Moon	5	1033	4	1955	3	0535	2	1554
First Quarter	12	0334	11	1117	9	2214	9	1306
Full Moon	19	1200	19	0418	17	2257	17	1817
Last Quarter	27	1623	27	0844	25	2304	25	1106

Because the earth's period of revolution about the sun (365.24+ days) is not evenly divisible by the moon's period of revolution about the earth (27.321 days), the dates and times of lunar phases, moonrise and moonset, and tidal data must be recomputed for each year. The following information, however, is based on geometrical relationships and holds true for all times:

- 1. The New Moon rises at sunrise, crosses the meridian at noon, and sets at sunset.
- 2. The First Quarter Moon rises at noon, crosses the meridian at sunset, and sets at sunrise.
- 3. The Full Moon rises at sunset, crosses the meridian at midnight, and sets at sunrise.
- 4. The Last Quarter Moon rises at midnight, crosses the meridian at sunrise and sets at noon.

APPENDIX C
SUNRISE AND SUNSET TABLES

TABLE C-1 Sunrise and Sunset for Point Mugu (January-June)

Sunrise, Sunset, and Duration of Twilight for Point Mugu, CA. 34°07' N. 119°07' W (January to June)

Note: All times are Pacific Standard Time. (120th meridian): Add 1 hour when Daylight Savings Time is in effect.

	January	February	March	Aprıl	May	June	
Date	Sun- Sun-	Sun- Sun-	Sun-Sun-	Sun-Sun-	Sun- Sun-	Sun-Sun-	Date
	rise set	İ					
1	0702 1658	0654 1727	0626 1753	0544 1817		0446 1903	1
2	0703 1659	0653 1728	0624 1753			0446 1903	2
3	0703 1700	0652 1729	0623 1754			0445 1904	
4	0703 1700					0445 1904	4
5	0703 1701	0651 1731	0621 1756	0539 1820	0503 1843	0445 1905	5
6	0703 1702	0650 1732	0619 1757	0537 1821	0502 1844	0445 1905	6
7	0703 1703		0618 1758	0536 1822	0502 1845	0445 1906	7
8	0703 1704	0648 1734	0617 1758			0444 1906	8
9			0615 1759	0533 1823	0500 1846	0444 1907	9
		0647 1735	0614 1800	0532 1824	0459 1847	0444 1907	10
11	0703 1706	0646 1736	0613 1801	0531 1825	0458 1848	0444 1908	1:
12	0703 1707	0645 1737	0611 1802	0530 1825	0457 1849	0444 1908	12
13	0703 1708	0644 1738	0610 1802	0528 1826	0456 1849	0444 1909	13
14	0702 1709	0643 1739	0609 1803	0527 1827	0456 1850	0444 1909	14
15	0702 1710	0642 1740	0607 1804	0526 1828	0455 1851	0444 1909	15
16	0702 1711	0641 1741	0606 1805	0525 1829	0454 1852	0444 1910	16
17	0702 1712	0640 1742	0605 1806	0523 1829	0453 1852	0444 1910	17
18	0701 1713	0638 1743	0603 1806	0522 1830	0453 1853	0445 1910	18
19	0701 1714	0637 1744	0602 1807	0521 1831	0452 1854	0445 1911	19
20	0701 1715	0636 1745	0601 1808	0520 1832	0451 1855	0445 1911	20
21	0700 1716	0635 1746	0559 1809	0518 1832	0451 1844	0445 1911	21
22	0700 1717	0634 1747	0558 1809	0517 1833	0450 1856	0445 1911	22
23	0659 1718	0633 1747	0556 1810	0516 1834	0450 1857	0446 1911	23
24	0659 1719	0632 1748	0555 1811	0515 1835	0449 1857	0446 1912	24
25	0658 1720	0630 1749	0554 1812	0514 1835	0449 1858	0446 1912	25
26	0658 1721	0629 1750	0552 1813	0513 1836	0448 1859	0446 1912	25
27			0551 1813	0512 1837	0448 1900	0447 1912	27
28			0550 1814	0511 1838	0447 1900	0447 1912	28
	0656 1724	0626 1752	0548 1815	0509 1839	0447 1901	0447 1912	29
,	0655 1725	1	0547 1816			0448 1912	30
31	0655 1726		0546 1816		0446 1902		3:
	Average	Average	Average	Average	Average	Average	
	Twilight	Twilight	Twilight	Twilight	Twilight	Twilight	
	Civil:	Civil:	Civil:	Civil:	Civil:	Civil:	
,	27 min.	26 min.	25 min.	26 min.		29 min.	
	Nautical:	Nautical:	Nautical:	Nautical:	Nautical:	Nautica!:	! !
	58 min	55 min.	54 min.	57 min.	61 min.	65 min.	l

NAWCWPNS TM 7667 TABLE C-2 Sunrise and Sunset for Point Mugu (July-December)

Sunset, Sunset, and Duration of Twilight for Point Mugu, CA. 34°07' N. 119°07 W (July to December)

Note: All times are Pacific Standard Time (120th meridiam): add 1 hour when Daylight Savings Time is in effect:

	Jul		Aug	ust	Sept	ember		ober	Nove	ember		mber	
Date	Sun-	Sun-	Sun-	Sun-	Sun-	Sun-	Sun-	Sun-	Sun-	Sun-	:Sun-	Sun-	Dat
:	rise	set	rise	set	rise	set	rise	set	rise	set	rıse	set	
1	0448	1912	0507	1858	0530	1823	0551	1741	0616	1704	0644	1647	
2	,0449	1912	0508	1857	0530	1821	0551	1740	0617	1703	0645	1647	1 1
3	0449	1912	0509	1856	0531	1820	10552	1738	0618	1702	0646	1647	
4	0450	1912	0510	1855	0532	1819	0553	1737	0619	1701	0646	1647	,
5	0450	1912	0510	1854	0532	1817	0554	1736	0620	1700	0647	1647	
6	0451	1911	0511	1853	.0533	1816	0554	1734	0621	1659	0648	1647	
7	0451	1911	07.2	1852	0534	1815	0555	1733	0621	1658	0649	1647	
8	0452		0512	1851	0535	1813	0556	1732	0622	1658	10650	1647	
9	0452	1911	0513	1850	0535	1812	0557	1730	0623	1657	0650	1647	
	0453	1910	0514	1849	0536	1810	0557	1729	0624	1656	0651	1657	1
11:	i : 045 3	1910	0515	1848	0537	1809	: 10558	1728	0625	1655	0652	1647	3
	0454	1910			0537		10559		0626		0653	1648	
	0454		0516		0538		0600		0627		0653	1648	
	0455		0517		0539		1601		0628		0654	1648	
	0456		0518		0539		0601		0629		10655	1648	
,	0456		0518		0540		10602		0630		10655	1649	
	0457		0519		0541		0603	:	0631		0656	1649	•
	0458		0520		0541		0604		0632		0657	1650	
	0458	_	0520		0542		0605		0633		0657	1650	. :
	0459		0521		0543		10606		0634		10658	1650	-
1		1900	0321	1000	:	1750	10000	1/1/	0034	1630	0638	1630	. •
21	0500	1905	0522	1837	0544	1755	10606	1715	0635	1650	0658	1651	
22:	0500	1905	0523	1835	0544	1754	0607	1714	0636	1649	0659	1651	
231	0501	1904	0523	1834	0545	1752	0608	1713	0637	1649	0659	1652	
24	0502	1904	0524	1833	0546	1751	0609	1712	0637		0700	1653	! :
25	0502	1903	0525	1832	0546	1749	0610		0638		0700	1653	
•	0503	1902	0525		0547		0611		0639		0700	1654	
	0504	1902		1829	0548	1747	0611	1709	0640		0701	1654	
28	0504		0527		0549		0612		0641		0701	1655	
	0505		0528		0549		0613		0642		0702	1656	
	0506		0528		0550		0614		0643		0702	1656	
	0507		0529	1824			0615	1705		2011	0702	1657	
	Averag	age Average		Avera	Average Average			Average		Avera	ge	ĺ	
	Twilic		Twili		Twili		Twili		Twili		Twili	•	•
i	Civil:		Civil	:	Civil		Civil		Civil		Civil		
	29	min.	26	min.	!	min.	1	min.	1	mın.	I .	mın.	!
1	Nautic		Nauti		Nauti	cal:	Nauti		Nauti		Nauti	cal:	!
	63	min.	58	min.		min.	EA	min.		min.	I	min.	

NAWCWPNS TM 7667 TABLE C-3 Sunrise and Sunset for Barking Sands (January-June)

Sunrise, Sunset, and Duration of Twilight for Barking Sands, Kauai, HI (January to June) 22°02' N, 159°47' W

Note: All times are Alaska-Hawaii Standard Time. (150th Meridian)

!	Janua	LT;	Febru	ary	Mai	rch	Apr	::1	Ma	ıy	Jun	e	
Date		- 1	Sun-	รบก-	Sun-	Sun-	sun-	Sun-	Sun-	รนก-	Sun-	Sun-	Date
	rise	1	rise	set	rise	set	rise	set	rise	set	rise	set	
1	0718	1807	0718	1828	0700	1843	0632	1854	0607	1905		1919	1
1	0719	1808			0659	1843	0631	1855	0607	1906		1919	2
- ,	0719	1809	0717		0659	1844	0630	1855	0606	1906	0555	1920	;
	0719	1809		1830	0658	1844	0629	1855	0606	1906	0555	1920	4
	0719	1810		1831	0657	1845	0628	1856	0605	1907	0555	1920	. !
	0720	1811		1831	0656	1845	0627		0604		0555	1921	, (
7	0720	1811		1832	0655	1846	0627	1856	0604	1908	0555	1921	i '
.)	0720	1812			0654	1846	0626	1857	0603	1908	0555	1921	
- :	0720		0714		0653		0625	1857	0603	1909	0555	1922	}
- !	0720	1813			0653	1847	0624	1857	0602	1909	0555	1922	1
-0	3.20		3.30			_ =			ļ 1		[-	i i
31	0720	1814	0713	1834	0652	1847	0623	1858	0602	1909	0555	1922	1
	0721		0712		: 0650	1848	•	1858	0601		0555	1923	1
1	0721		0712		0650	1848			0601	1910	0555	1923	1
	0721		0711		0649		0620		0600	1911	0555	1923	
	0721		0710		0648	1848			0600		0555	1924	1
	0721		0710		0647		0619		0559		0555	1924	1
_	0721		0709		0646		0618		0559		0556	1924	
	0721		0709		10645		0617		0559		0556	1925	1
	ł		0708		:0644		10616		0558		0556	1925	1
	0721		0707		0643		0615		0558		0556	1925	
20	10720	1320	1	1033		1000		-,	1		<u> </u>		1
21	0720	1821	0706	1839	0642	1851	0615	1901	0558		0556	1925	1
	0720		0706		0641	1851	0614		0557		0557	1925	
	0720		0705		0641		0613		0557	1915	0557	1926	
	0720		0704		0640	1852		1902	0557	1915	0557	1926	
	0720		0703		0639		0612		0557		0557	1926	
	0719		0703		0639		0611		0556	1916	0558	1926	
	0719		0702		0637		0610		0556.		10558	1926	
	0719		0701		0636		0609		0556	1917	0558	1926	
	10719		0701		10635		0609	1904	10556		0558	1926	
	0718	1827	ı		0634		0609		0555		0559	1927	7} :
	0718	1828	1		0633		0608		0555	1918			<u> </u> ;
	Averag		Avera	ge	Avera	age	Avera	_	Avera	ige	Avera	▼.	
	Twilig		Twili		Twili	ght	Twili	ght	Twili	ght	Twili	_	
	Civil		Civil	-	[Civil		Civil	:	Civil:		Civil		1
	ŧ - :	min.	1	min.	22	min.	23	min.	24	min.		min.	
	!Nauti		Nauti		Naut	cal:	Nauti	cal:	Nauti	cal:	Nauti]
	•	min.	1	min.	4	5 min.	50	min.	1 53	3-min.	. 55	min.	l

TABLE C-4 Sunrise and Sunset for Barking Sands (July-December)

Sunrise, Sunset, and Duration of Twilight for Barking Sands, Kauai, HI 22°02' N. 159°47' W (July to December)

NOTE: All times are Alaska-Hawaii Standard Time (150th Meridian)

	July		Angr	ist	Sept	ember	Octo	ober	Nov				
D3te	Sun-	sun-	Sun-	sun-	sun-	Sun-	Sun-	Sun-	Sun-		Sun-	Sun-	Date
	Ilse s	set	rise	set	rise	set	rise	set	I15e	set	rıse	set	
1			0611		0622		0630	1827	0643	1802	0702	1755	
2	0559	1927	0612	1919	0622	1855	0631	1826	0643	1802	0702	1755	•
3	0600	1927	0612	1918	0623	1854	0631	1825	0644	1801	0703	1755	•
4	0600 1	1927	0612	1918	0623	1853	0631	1824	0645	1801	0703	1755	
5	0600	1927	0613	1917	0623	1852	0632	1823	0645	1800	0704	1755	!
6	0601 1	1927	0613	1916	0623	1851	0632	1822	0646	1800	0705	1756	(
7	0601	1927	0614	1916	0624	1850	0632	1821	0646	1759	0705	1756	•
8	0602 1	927	0614	1915	0624	1849	0633	1820	0647	1759	0706	1756	1
ò	0602	.926 [°]	0614	1914	0624	1848	0633	1819	0647		0707	1756	•
			0615	1914	0625		0633		0648		0707	1757	10
											• •		
11	0603	1926	0615	1913	0625	1846	0634	1818	0649	1758	0708	1757	1:
12	0603	1926	0616		0625	1845	0634	1817	0649	1757	0709	1757	13
13	0603	926	0616	1912	0625	1844	0634	1816	0650	1757	0709	1758	1.
14	C604	1926	0616	1911	0626	1843	0635	1815	0650	1757	0710	1758	' 14
15	0604	1926	0617	1910	0626	1842	0635		0651	1756	0710	1758	1!
			0617		0626		0636	1813	0652		0711	1759	1
			0617		0626		0636		0652		0712	1759	1
			0618		0627		0636		0653		0712	1800	11
			0618		0627		0637		0654		0713	1800	19
			0618		0627		0637		0654		0713	1800	20
			•		•				•				
21	0607	1924	0619	1905	0628	1836	0638	1810	0655	1755	0714	1801	2
22	0607	1924	0619	1905	0628		0638		0656	1755	0714	1801	2
23	0608	1923	0619	1904	0628	1835	0639	1808	0656	1755	0715	1802	2:
24			0620		0628		0639		0657		0715	1803	24
25	0608	1922	0620	1902	0629		0639		0658		0716	1803	2
			0620		0629		0640		0658		0716	1804	20
			0621		0629		0640		0659		0716	1804	2
_			0621		0630		0641		0700		0717	1805	28
			0621		0630		0641		0700		0717	1805	29
			0621		0€30		0642		0701		0718	1806	30
		_	0622	1857			0642	1803		2,00	0718	1807	3:
	Average		Averag	ie	Avera	ge	Avera	——- пе	Average		Avera	ie.	
	Twilight	:	TWILLI		Twilight			gnt	TWILL	ght	TWILL	ght	
	CIVI :		CIVII:		CIVII		Civil		Civil	:	C: vil		
		nın.		min.		2 min.		3 min.		4 min.		a min.	
	Nautica:					cal:			Nauti		Nauti	cal:	
		nın.				8 min.	4:			1 min.		2 min.	•

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